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INFANTRY ASSOCIATION
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APRIL, 1920

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By

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INFANTRY JOURNAL

VOL. XVI APRIL, 1920 No. 10

Localized Recruiting

By Major M. B. Stewart, U. S. Army

THE recent action of the Secretary of War in allocating recruiting areas to the various organizations of the Army is a move that has long been advocated in the service.

For many years army officers have recognized the advantages of such a system and have urged it as a means of solving a number of their most troublesome problems.

Desertion, which in the past has been a serious matter in the Army, was one of the evils they hoped to remedy by localizing organizations. In the past, the man who deserted the service could drift back home without much fear of having his record follow him or, if it did, it meant little to him in his standing in the community. With localized recruiting, it was believed that conditions would be different; that in each community in time there would be many who had been educated to appreciate the seriousness of desertion and who would visit the deserter with corresponding treatment. Knowing that his record would in all probability precede him home and that it would come to the knowledge of friends and former associates in the regiment, the would-be deserter would be apt to hesitate before taking such a step.

As a means of facilitating recruiting, it cannot fail to be successful. The great majority of men who have completed an enlistment in the Army have left it with nothing but pleasant impressions. Though they did not reenlist, they have not forgotten the service or its associations. Whenever an occasion offers itself, they drift back to visit the old regiment and to renew old acquaintances. Such a spirit localized in a community and centered on a given regiment would be a considerable inducement to adventurous youngsters to follow in the footsteps of their elders.

The greatest benefit to be gained from such a system lies in the certainty with which it would bring the Army into more intimate contact with the people of the country.

The chief handicap under which the Army has labored in the past has been its remoteness from the people. Except for widely separated intervals, the Army has been located in comparatively small detachments in isolated localities where only a small proportion of the people ever came in contact with it.

Physical isolation has begotten social isolation. The soldier has gone his own way, the civilian his, drifting

apart and gradually becoming an object of curiosity each to the other. The general result has been to make the old soldier saying, "The Army has no friends," more real than fanciful, a condition that goes beyond the small concern of individuals and invades matters of vital concern to the country.

Briefly, the people of the country do not know their army. They are excusably ignorant of its activities, its methods, its purposes and its motives. In the absence of first-hand information, they are willing to believe what comes to their ears. The net result is that there is an almost entire lack of sympathy on the part of the people toward the Army, coupled with a corresponding indifference toward all that the Army symbolizes in the way of military policy and preparedness.

There has never been any question as to the attitude of the people toward their fighting men in time of war. During these rare periods they have given the soldier, professional and citizen alike, the whole-hearted support they reserve for worthy men and worthy causes. At such times, and at such times only, the Army comes into its own. It is of the people. It becomes an institution of the people, something they know, understand and appreciate and loyally support.

The reason is quite plain. The Army is in the midst of the people. They recognize the professional fighting man as something more than a hireling. They see him to be a man, human from top to bottom, clean and straight, even though he be a little stiff. Their own youth is involved; bringing the people into intimate, interested contact with army methods and processes.

In brief, the Army and the people at such times begin to speak a common language and to have a common understanding which begets mutual respect and sympathy.

In the past, this condition has invariably been but temporary. The end of each war has always been accompanied with a backward swing of the pendulum of public interest in military matters. This is nothing more than should be expected; nevertheless, it is a circumstance fatal to anything savoring of a continuing and basic military policy or of corresponding preparedness.

Our experience in the late war is typical in every respect of the forward and backward swing of the pendulum. During the two years of our operations, public interest centered on the Army and its activities to a greater degree and a greater intensity than at any time since the Civil War. Millions of our people took an active part in military work, and for each one actively engaged, a score of others were actively, if indirectly, interested. In a word, the nation was for the time being spiritually on a military basis.

Following close on the heels of the armistice, the backward swing of the pendulum began. Public interest in matters of military import was limited to keen solicitude as to the speed of demobilization and of readjustment to pre-war conditions. The lessons of the war, in all that pertained to preparedness for defense, were ignored in the haste to settle down once more to business and economical administration. Our expensive unpreparedness

was forgotten with a conclusiveness that has landed us back in approximately the same pitiful condition.

The attempt to pave the way for universal training — the outstanding lesson of the war—now meets with apathy, if not actual opposition on the part of many of our people, and this at a time when peace has not yet been formally declared. Other fundamental lessons will undoubtedly suffer in a similar manner.

Summed up, the trouble appears to be that we fail to sustain during peace the sympathetic understanding and interest that prevails during war. It may be the Army's fault. It may be the people's fault. It makes no difference in the long run. The net result is the same. Whoever may be at fault, the country suffers.

The solution is simple. The Army must keep in touch with the people. It has friends by the millions in time of war. It must do something to keep up a speaking acquaintance with those friends in peace time. Instead of retiring, literally as well as figuratively, into the backwoods and the borderlands the minute the last gun is fired, the Army must manage in some way to keep itself in educational contact with the people at all times.

The Army has nothing to fear from contact with the people at any time. Its mission at all times is an honorable and helpful one. It exists for one purpose and one alone—to serve the people, whether they know it or not. Moreover, it is learning to serve them better each day.

But the people will never know this unless the Army makes it known and, in making it known, the Army must bear in mind that the American people believe more readily what they see than what they hear—the Missouri characteristic has outgrown its native borders. The people have neither time nor inclination to go out searching for the Army to learn of its doings. If the Army and the people are to get together, the Army must do the getting. It must go to the people with its service or it must send evidence of that service to the people in a form that will speak for itself and make an impression that will last.

Recruiting is the one link that always connects the Army with the people. Properly conducted, it may be made the means of keeping the Army in sympathetic touch with the home land and the home folks. But to do this it must be carried on after a fashion that will do more than take an occasional man from this community or that, carry him away to a life of which the community knows and cares nothing, and return him with nothing to show but a discharge, nothing of community interest to relate, and no one interested in his experience interesting or otherwise.

The Army must take its men, not singly, but in groups; not occasionally, but with periodical regularity. It must do something worth while with them during their period of service and send them back home with something worth telling, something worth showing, and with a tie that will bind them together for the rest of their lives.

The men who went out to the Civil War went in groups from the communities of the country. They served together in those same groups, and

those who survived returned to their homes in what was left of the group. For fifty-five years they have remained bound together by a bond of an experience in common, and the fact that they have remained so united has won for them the sympathy and respect of a public that has forgotten a great deal of what they did or how they did it.

The same is, and will continue to be, true of the men who fought in the World War.

There is no reason why the men who serve in time of peace, if the circumstances of their service will permit, should not enjoy much of the same bond that binds the war veterans in after life. If, year after year, the young men of a community are permitted to go to the same regiment, in time they will blaze a trail to that regiment that will link it to the community and establish it in the minds of that community. If each year brings back to that community its quota of young men, trained, benefitted, and imbued with the associations and traditions of that regiment, that regiment will have no difficulty in finding its way to the heart of that community.

To thus establish the identity of our regular organizations in the community mind, and eventually in the community heart, is a broad and educational stride toward a proper understanding on the part of the people of the country's military needs.

It will be a long process, but it will be correspondingly sure and fruitful. It is decidedly worth while.

The allocation of regiments to states for recruiting purposes is as follows:

Maine, New Hampshire, Vermont, Rhode Island	13th Infantry, Camp Merritt, N. J.	1st Field Art., Fort Sill, Okla.	42d Regt., C. A. C., Camp Eustis, Va.	3d Cavalry, Fort Myer, Va.	
Massachusetts	36th Infantry, Camp Devens, Mass.			Ft. Ethan Allen, Vt.	
Connecticut	43d Infantry, Camp Lee, Va.				
New York (less New York City)	22d Infantry, Governors Island, N. Y.	12th Field Art., Camp Travis, Tex.			
	63d Infantry, Madison Barracks, N. Y.				
New York City	41st Infantry, Camp Upton, N. Y.	9th Field Art., Fort Sill, Okla.	52d Regt., C. A. C., Camp Eustis, Va.	13th Cavalry, Fort Clark, Tex.	
	42d Infantry, Camp Upton, N. Y.	76th Field Art., Camp Pike, Ark.			

New Jersey	45th Infantry, Camp Dix, N. J. 57th Infantry, Camp Dix, N. J.	2d Field Art., Camp Taylor, Ky.	44th Regt., C. A. C., Camp Jackson, S. C.	8th Cavalry, Fort Bliss, Tex.
Pennsylvania	46th Infantry, Camp Jackson, S. C. 48th Infantry, Camp Jackson, S. C. 12th Infantry, Camp Meade, Md. 29th Infantry, Camp Benning, Ga.	81st Field Art., Camp Knox, Ky. 83d Field Art., Camp Knox, Ky.		
Delaware Maryland District of Columbia	17th Infantry, Camp Meade, Md.	19th Field Art., Camp Bragg, N. C.	53d Regt., C. A. C., Camp Eustis, Va.	12th Cavalry, Columbus, N. M.
Virginia	62d Infantry, Camp Lee, Va.			
West Virginia	16th Infantry, Camp Taylor, Ky.			
Kentucky	18th Infantry, Camp Taylor, Ky.	5th Field Art., Camp Taylor, Ky.	51st Regt., C. A. C., Camp Jackson, S. C.	5th Cavalry, Marfa, Tex. 1st Engineers, Camp Taylor, Ky.
Tennessee	26th Infantry, Camp Taylor, Ky.	6th Field Art., Camp Taylor, Ky.		
North Carolina	28th Infantry, Camp Taylor, Ky.			
South Carolina	6th Infantry, Camp Gordon, Ga.			
Florida Georgia	60th Infantry, Camp Gordon, Ga. 61st Infantry, Camp Gordon, Ga.	21st Field Art., Camp Gordon, Ga.	56th Regt., C. A. C., Camp Jackson, S. C.	6th Cavalry, Camp Gordon, Ga. 7th Engineers, Camp Gordon, Ga.
Alabama Mississippi	11th Infantry, Camp Gordon, Ga.	20th Field Art., Camp Bragg, N. C.		
Ohio	2d Infantry, Camp Sherman, Ohio. 40th Infantry, Camp Sherman, Ohio.	14th Field Art., Fort Sill, Okla. 7th Field Art., Camp Taylor, Ky.	7th Cavalry, Fort Bliss, Tex.	59th Regt., C. A. C., Camp Lewis, Wash.
Indiana	20th Infantry, Fort B. Harrison, Ind. 49th Infantry, Fort Snelling, Minn.	8th Field Art., Camp Fuston, Kans.	4th Cavalry, Fort Ringgold, Tex.	
Michigan	10th Infantry, Camp Custer, Mich. 14th Infantry, Camp Custer, Mich.	77th Field Art., Camp Dodge, Ia.		

Illinois	51st Infantry, Camp Grant, Ill. 52d Infantry, Camp Grant, Ill. 53d Infantry, Camp Grant, Ill. 54th Infantry, Camp Grant, Ill.	3d Field Art., Camp Grant, Ill. 11th Field Art., Camp Grant, Ill.	16th Cavalry, Brownsville, Tex. 318th Engineers, Camp Grant, Ill.	59th Regt., C. A. C., Camp Lewis, Wash.
Iowa	39th Infantry, Camp Dodge, Ia. 58th Infantry, Camp Dodge, Ia.	16th Field Art., Camp Dodge, Ia.	4th Engineers, Camp Dodge, Ia.	
Wisconsin	47th Infantry, Camp Dodge, Ia. 59th Infantry, Camp Dodge, Ia.	13th Field Art., Camp Dodge, Ia.		
Minnesota	56th Infantry, Camp Funston, Kans.	79th Field Art., Camp Funston, Kans.		
Nebraska	55th Infantry, Camp Funston, Kans.			
Kansas	34th Infantry, Camp Funston, Kans. 64th Infantry, Camp Funston, Kans.	80th Field Art., Camp Funston, Kans.	2d Cavalry, Fort Riley, Kans.	5th Engineers, Camp Funston, Kans.
Missouri	4th Infantry, Camp Pike, Ark. 38th Infantry, Camp Pike, Ark.	18th Field Art., Camp Pike, Ark.	43d Regt., C. A. C., Camp Eustis, Va.	1st Cavalry, Douglas, Ariz. 6th Engineers, Camp Pike, Ark.
Louisiana	7th Infantry, Camp Pike, Ark.			
Arkansas	30th Infantry, Camp Pike, Ark.	10th Field Art., Camp Pike, Ark.		
Oklahoma	23d Infantry, Camp Travis, Tex.	15th Field Art., Camp Travis, Tex.	14th Cavalry, Fort Sam Houston, Tex.	2d Engineers, Camp Travis, Tex.
Texas	9th Infantry, 37th Infantry, 3d Infantry.	17th Field Art., Camp Travis, Tex.		

California	44th Infantry, Presidio, San Francisco, Cal.			
Arizona New Mexico	19th Infantry, Douglas, Ariz. (Also Colorado.)	82d Field Art., Fort Bliss, Tex.		
Nevada Utah	32d Infantry, Camp Kearny, Cal.		55th Regt., C. A. C., Camp Lewis, Wash.	11th Cavalry, Monterey, Cal. 9th Engineers, Fort Bliss, Tex.
Colorado	19th Infantry, Douglas, Ariz. (Also Arizona and New Mexico.)			
Wyoming	21st Infantry, Fort George Wright, Wash. (Also North Dakota and South Dakota.)	4th Field Art., Camp Stanley, Tex.		
Idaho Montana Oregon	35th Infantry. Camp Lewis, Wash.			
Washington	1st Infantry, Camp Lewis, Wash.	78th Field Art., Camp Grant, Ill.	57th Regt., C. A. C., Camp Lewis, Wash.	15th Cavalry, Port D. A. Russell, Wyo. 8th Engineers, Fort Bliss, Tex.
North Dakota South Dakota	21st Infantry, Fort George Wright, Wash. (Also Wyoming.)			

The Accompanying Gun

By Lieutenant Colonel Franklin T. Burt, Infantry

DURING offensive engagements of the late war, advancing infantry frequently encountered machine-gun units of resistance which had escaped the general preparatory fire of their artillery.

These units of resistance were generally known as "machine-gun nests," and varied from a single machine gun with its crew (hastily posted in a shell crater, building, gun pit, behind walls, or similar shelter, affording fairly complete protection from rifle and machine-gun fire and from fragments of shells bursting in the vicinity) to organizations of elaborate concrete and steel construction, carefully sited and supplied with numerous machine guns; with approaches guarded by extensive fields of obstacles.

The less elaborate types, while also frequently encountered in trench warfare, are specially characteristic of the rear guard defense, and of defensive positions as organized in open warfare.

The elaborate organizations are possible of construction only in continued trench warfare or as a part of permanent or semi-permanent forts, and require for their disorganization a preparatory artillery concentration with heavy shell. Such works, or parts of such works, if not disorganized by the general artillery preparation, may compel some delays to the advance until they can be taken by maneuver or rendered less effective by an additional shelling. But these elaborate works would be very exceptional in open warfare and require no more than mention in a discussion of the accompanying gun. However, the improvised or hastily prepared machine-gun defense has been found very effective and will doubtless be encountered in greater numbers in future operations; it is this kind of defense which will here be considered.

Motorized ammunition supply to artillery and machine guns enables them, aided by aerial observation, to compel attack and defensive formations which are not favorable to the development of infantry fire power.

The thin first wave represents a fire-producing power which is slight considering the number of men in this and succeeding waves who are exposed to enemy machine-gun fire. Under these conditions it is obvious that infantry, paying dearly, must advance almost solely by virtue of determination, unless powerfully aided by friendly artillery and machine-gun fire, aid which, of necessity, is often not available.

In an endeavor to quickly silence the defensive machine gun, organizations and matériel (the 75-mm. and 37-mm. guns, the light Stokes mortar and light minenwerfer), not entirely suited in design to this use, were brought into action in more or less intimate accompaniment to the assaulting infantry with the idea of reducing their casualties.

It may be noted that among all these weapons none threw a weight of shell intermediate between the 1.1-pound shell of the 37-mm. gun and the 12-

pound or thereabouts of the 75-mm. gun and the Stokes mortar and light minenwerfer. The 37-mm. is of particular value as an expert's weapon for shooting through slits in "pill boxes," and through machine-gun embrasures in general; the 75-mm. as a light artillery weapon; the Stokes mortar and minenwerfer as trench mortars, the minenwerfer also extending its activity, under favorable circumstances, to the delivery of effective harassing fire on advanced areas. Each of these weapons has its peculiar virtues and serves well the purpose for which it was designed.

As a weapon to accompany advancing infantry for the purpose of quickly silencing improvised machine positions which are encountered in their progress, none of these special weapons (differing greatly in their characteristics) is without serious faults.

In proceeding to a consideration of such desirable characteristics of these weapons as should be combined in the accompanying gun, and of the conditions which demand these characteristics, certain facts should be recalled and kept in mind: that to advancing troops the fact of delay under fire causes the initial idea of advancing to be gradually displaced by the idea of holding, regardless of the fact that the causes of the delay may have ceased to exist. Here the time element is vital—the defensive machine gun should be silenced immediately. But coexistent with this requirement is found extreme difficulty of communication by any means yet devised. I will first state the essential characteristics which must be possessed by the accompanying gun and its ammunition and then set forth the conditions which indicate these conclusions:

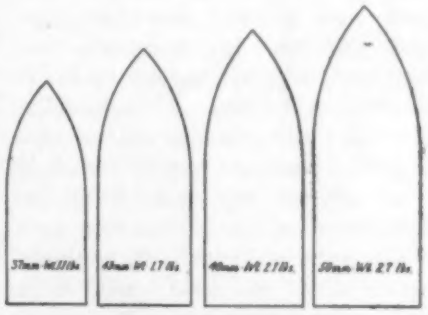
1. Design which permits of quick disassembly into loads such as one man can carry over rough ground.

2. Steel shell which will break through ordinary brick, adobe stone or concrete walls of buildings and the common stone wall fence at ranges up to 1,200 meters, with percussion fuse designed to explode charge after penetration of average wall.

3. Accuracy equal to that of the 37-mm. gun.

4. A weight of ammunition such that one man can carry at least six rounds in special bandoleers.

For convenience of comparison illustrations are given to show the sizes of 37, 43, 46 and 50-mm. shell, with weights of each, on the assumption that the forms of the last three are similar to that of the 37-mm. shell.



In order to keep in close contact with the assaulting infantry a rapid disassembly of the gun into one-man loads makes it possible for the gun crew to move forward over difficult terrain, and under fire or enemy observation, to take infantry formations and avoid presenting a special target. Such a formation would not increase the probability of a part of the gun being

disabled and would permit ammunition carriers to quickly replace casualties among the remainder of the gun crew.

The observed effect of high explosive is of special interest here as affecting the question of accuracy, and indicating the nature of shell suited to the purposes of the accompanying gun.

In semiconfined spaces such as standing trenches and dugouts, high explosive, without fragments, is effective by action of the rushing gases and by momentary high pressures set up by their evolution. Aside from moral effect, high explosive is effective, against men in the open, only as a propellent of metal fragments. This, notwithstanding some accounts published early in the war telling of numerous men found dead in the open, without trace of wounds, killed by "concussion," "pressure" and "shock." On the contrary, cases were observed where men were knocked down, scorched, and blackened by the blast from high explosive shell, but were still able to continue in action. These cases are somewhat infrequent, as men so close to a shell-burst are usually struck by fragments, but they show clearly that high explosive can be depended upon to get results in the open only by throwing splinters of metal; and, while splinters are sometimes thrown considerable distances, the great majority of the casualties which result from them occur within 15 yards of the burst.

A direct or very close hit (so close as to include the men within the resulting crater) by high explosive shell is necessary to injure a man lying in a hole scooped out of the earth sufficiently deep to bring his outline below the surface of the ground, thus obtaining protection from fragments grazing the surface. This form of shelter, therefore, offers much better protection than a larger pit or trench, as the probability of a hit within the area of the shelter is less, as the shelter is smaller. From this it is evident that against machine guns and personnel sheltered in small pits, such as the usual shell crater or gun pit, a small shell is almost as effective as a larger one—a direct hit being the requirement.

It may be anticipated that on rough, rocky ground pockets among the rocks will be selected as shelter for machine-gun positions. The requirements for their reduction will be generally similar to that of gun pits. To be effective against the sandbag or earth parapet of a machine-gun emplacement the shell must, if it lodges in the parapet, carry a sufficient charge of explosive to wreck the emplacement or, if it penetrates the parapet, explode and put the gun crew out of action.

While the form of the cover is different where positions are taken in buildings, the requirements for silencing the gun are practically the same: a direct hit in or against the wall of, and burst in the room in which the gun is situated, being necessary. This is true of even a rather heavy shell, as the effect of the 75-mm. shell exploding within the room of a building is almost entirely confined to that room, except where the partitioning walls are of boards, light lath and plaster or similar frail construction, in which cases shell splinters may be driven into the adjoining rooms. Some fragments pass through light floors and ceilings.

Where use is made of stone fences to secure cover for machine guns, the direct, simple method of reduction by explosive shell is to secure hits, either in the embrasure or against the wall, in close proximity to the gun. Again, the shell must have sufficient striking energy to break through the wall, or partially break through, and complete the breach by explosion of the charge; but the hit in this latter case must be made almost directly in front of the machine gun, as there will result in such cases only a very slight spreading of the fragments which are blown through the wall. While the exceptional wall, thick, of heavy stone and mortar, or concrete, will withstand rather heavy shell, the average stone fence or wall will be broken through by a strongly built shell of weight much less than that of the 75-mm. gun.

In operating against the types of machine-gun cover thus far discussed, the heavy shell, if used by an accompanying gun, Stokes mortar or light minenwerfer, would possess only slight advantages over the light shell fired with moderately flat trajectory from a light gun, as well-placed hits by light shell are more effective for the detail work of the accompanying gun than heavy shell hits in the neighborhood of the target.

We have herein previously considered the accompanying gun as operating against positions which have been located and which afforded protection from rifle fire and from fragments of shell bursts, from hits other than those on or extremely close to the position. In addition, there are the difficult cases where the positions afford cover from both view and fire, and those which afford cover from view only—positions taken in grain fields, woods, clumps of bushes, among rocks, buildings, piles of debris, etc., and which often cannot be readily found. Even when firing, their location is at times very difficult, especially under conditions of low visibility due to smoke, haze, or fog.

Under such circumstances the machine gun will generally be able to do considerable harm before the attackers press so close as to discover its whereabouts, and in this, as in other cases, the preeminent requirement is good infantry. It is obvious that under these conditions the accompanying gun must be well forward in order to render assistance which might materially influence the outcome of the action.

The reduction of hidden resistance by additional general shelling of extensive areas is distinctly an artillery task. At times, however, the infantry commander can determine with a considerable degree of certainty the approximate location of machine guns whose positions he cannot see; that is, he can say that they occupy certain clumps of bushes or woods, or a building, or buildings, etc.

In so far as such situations may affect the question of the accompanying gun, it is obvious that, for the purpose of shelling suspected areas, it will scarcely ever be possible to supply an accompanying weapon with a sufficient quantity of either light or heavy ammunition for effective shelling of such areas (nor will time usually permit of such action) unless they are very restricted in extent.

If, in such areas, personnel and crew are sheltered from rifle and machine-

gun fire and fragments from outside burst of shell, a direct hit is necessary, and the increased probability of a direct hit with the greater number of light shells strongly indicates a greater effect by an equal weight of light ammunition than would be obtained with the same total weight of heavy shell.

As to range of the accompanying gun: An effective range of 1,200 meters is sufficient to outreach the machine gun at its maximum range of appreciable effectiveness. One man should be easily able to carry at least six rounds of ammunition of a weight not exceeding 4 pounds per round.

The light mortar, with its high angle fire and very short danger space, is not suited to the work of an accompanying gun, as several rounds are usually required before the target is hit, and the supply of ammunition to this weapon, for even short advances, is very difficult.

The 75 mm. as an accompanying gun is ordinarily out of the question, unless it be understood that the accompanying gun shall often remain well out of range of hostile machine-gun and rifle fire, in which case its fire must be directed by an observer so distant as to usually render communication extremely slow and unreliable except in theory and maneuvers.

The lightness of the 37-mm. gun and its shell makes it possible to carry gun and ammunition far enough forward for the gun crew to see and quickly open fire on targets as they appear, and a highly skilled gunner using a telescopic sight can obtain direct hits on machine guns and through their embrasures. At ranges greater than 400 meters this will usually require several shots, which would not be necessary with a strongly built 43-mm. to 50-mm. shell capable of breaking through the average stone wall or the brick building wall reinforced by sandbags. While, with such a gun, projectile and mount, and a fairly trained gunner, much greater accuracy can be obtained than with a musket, it should not be necessary to reduce accuracy to a question of a few inches in order to secure the desired results. Direct hits somewhere on the machine-gun shelter should be made on first or second shots, and the first hit should suffice to put gun or crew, or both, out of action. And, while in numbers of cases the 37 mm. will prove effective, yet a slight increase in caliber and weight of shell would greatly increase the effectiveness of a gun of this type. With design which permits the barrel to be quickly detached, it is thought weights of loads could still be kept down to that which one man can carry.

The necessary weight of barrel presents the chief difficulty. The barrel of the 37 mm. weighs 51.5 pounds (assembled barrel and recoil mechanism, as now carried, weigh 88 pounds). With similar design and construction the weight of a 43-mm. barrel would be 79 pounds; of a 46-mm., 108 pounds; of a 50-mm., 139 pounds.

These weights may be reduced by: Reducing initial velocity, compound cylinder construction, use of improved matériel. The idea of reducing the initial velocity is not attractive, chiefly because of the shortening of danger spaces in the less flat trajectory and the resulting necessity for more accurate determination of ranges, but also because of decreased striking energy.

With its muzzle velocity of 1,320 feet per second the 37-mm. projectile has a striking energy near the muzzle of 13.5 foot-tons; with the same velocity the 43 mm. strikes with energy of 20.9 foot-tons; the 46 mm. 25.8 foot-tons and the 50 mm. 331 foot-tons. These striking energies fall off very rapidly as the velocity is reduced.

The compound cylinder gives an equal strength with a considerable reduction in weight of barrel. Where, as in this case, lightness is of such great importance, the advantage of the built-up gun would seem to justify this more expensive and laborious construction. On the authority of several reliable journals there have been decided advances made recently in increasing the strength of steel. A further reduction in weight of barrel would therefore appear possible.

As an all-day marching load for one soldier, any of the weights of barrel given above would be quite excessive. But the 43-mm. barrel could be carried several miles in action by two men carrying in reliefs, or, when conditions permitted, carrying double.

While it is not the purpose of this article to set forth the organization or the tactics of such an accompanying gun as would conform to the requirements which have been stated, the design and value of such a weapon depend to such an extent upon the number of men required for its operation, and the methods of its use, that, avoiding detail, a little space will be devoted to the treatment of these questions.

Accompanying Gun Organization.—(As an integral part of the infantry rifle company):

1 second lieutenant, commanding officer.
1 sergeant, gun commander armed with rifle.
1 corporal gunner ammunition carrier.[1]
1 private carrier (gun).[1]
1 private carrier (gun).[1]
1 private loader (ammunition carrier).[1]
1 private carrier (recoil mechanism).[1]
1 private carrier (mount).[1]
2 private carriers (one-half trail each).
1 private carrier (ammunition).[1]
1 private wagoner.[1]

One draft mule and equipment. Gun and mount complete, on gun carriage, with limber carrying ammunition, equipment and spare parts.

General Methods of Transport and Employment in the Offensive.—On the march, gun and ammunition are mule-drawn on gun carriage and limber which follow the company, and are thus transported as far into action as conditions permit. When transportation by this method is no longer practicable the gun crew (leaving the wagoner to take charge of mule and remaining equipment and ammunition) carry gun, mount, and trail, with necessary equipment and ammunition, forward into action with the company, their positions and movements conforming to the initial general directions received from the company commander.

Its further employment in action should be such as to make the gun available for immediate action against such targets as may be indicated by the company commander, and at the same time permit great initiative on the part of the commanding officer of the gun keeping in touch with the needs of the advanced elements of his company, in locating and destroying favorable targets, and in rapid shifting of the gun positions in anticipating and avoiding, when possible, hostile artillery fire

[1] Armed with pistol.

after a position has been disclosed by the fire of his gun.

Such organization and methods of employment of the accompanying gun but accord with the logical tendency to place weapons, capable of destroying machine-gun shelters, into more and more intimate contact with the most advanced battle elements.

The necessity for such a weapon has been constantly increasing since the day of the "Regimental Machine-Gun Platoon," followed by the machine-gun company and the divisional and brigade machine-gun battalions. The battalion machine-gun company has been strongly recommended and seems likely to be adopted. All these having resulted from an effort to provide means to insure fire superiority. And while this has necessitated a great increase in the volume and effectiveness of artillery preparation for attack, the possibility of blowing up the whole countryside in a few hours time is out of the question, and the accompanying gun appears as a weapon to overcome such remnants of a machine-gun defense as reveal themselves in their opposition to the progressing infantry during its advance to the assault necessary to win the position. In this advance, neither animals nor gun crews can long survive when offering such special targets, for rifle and machine-gun fire, as may be afforded by the 75-mm. gun unit, as a rule not long enough to justify their sacrifice. Usually it will not be possible to bring the gun up to such an advanced position as is necessary to secure immediate, definite results. The artillery organizations should be kept intact to furnish the general concentrations called for by divisional, brigade, regimental, and battalion commanders, before, during, and after the attack. Each of the special weapons which have been mentioned has its advocates —officers or men who have developed special skill and expertness in the handling of these weapons—but no organization, design of matériel, or methods of employment of the accompanying gun can be of general value if a high degree of training on the part of either officers or gun crew is required in order to make that gun effective.

—Courtesy Milwaukee Journal.

The Human Side of Troop Training

By Colonel Henry A. Finch, Corps of Engineers, U. S. Army

AT THIS juncture it is not easy to forecast the future. So far as concerns our Army, since it has not yet been decided what part our country is to play within or without a League of Nations, it follows logically that until some policy is adopted the military obligations which our country must assume will remain undetermined, and the extent of our military establishment will therefore continue unfixed.

The supply of public discussion today on this point far exceeds the demand, but, out of all the welter of words, one fact at least stands forth clearly—we are to have a nation-wide military training for our young men.

The World War, despite all the waste and misery in its train, emphasized for our country two cardinal truths. It proved to the world that, in spite of our "dollar chasing," the fighting spirit of our people had not declined, and it proved to the thinking men of our own country that the effects of military training are so beneficial that it is greatly to be desired, entirely aside from any consideration of an increase in the nation's military strength.

Our people need no further arguments supporting universal training; they require no reminders that 35 per cent of our eligible men had to be rejected for service because of grave physical defects that would render them a liability instead of an asset in the field. The men who have left the Army and who have returned to their homes with broadened mental horizons, with quickened perceptive faculties, with an appreciation of the value of discipline and teamwork, with the foundation laid for a sound body—these men are the exponents of the new order based on a new conception of a man's duty to himself and to his country. Some of these men who have studied psychology comprehend the causes of the great change that has taken place in their consciousness; others, like the rich father in George Ade's fable, may think that "psychology has something to do with fish." They are not given to self-analysis, but both classes unite in demonstrating, either consciously or unconsciously, that they have experienced a wonderful development while in the nation's service.

Universal military training will come as an experiment, but with every prospect of success, provided the agency charged with the responsibility for its application establishes at the outset a wise policy for handling the 500,000 candidates who will annually be entrusted to its care.

What will this policy be?

This question is now in the minds of many of our army officers, who appreciate the importance of this step and realize that no mistake will be tolerated by our citizens at large.

It seems logical to assume that this great task will be entrusted to the officers of our regular establishment, and therefore, in seeking an answer to the question as to the policy to be followed, it is best to inquire into the methods of training that have been em-

ployed in our Army for generations.

The principles on which our military system is founded were inherited, naturally enough, from the English army. The written and unwritten rules governing the relations between officers and enlisted men may be said to lie between the free-for-all, back-slapping intimacy that obtains in the Australian regiments and the rigid, autocratic official tyranny which permitted the Prussian officer to strike with impunity the soldier he was to lead in battle.

There is food for thought in the reflection that both systems, the Australian and the Prussian, produced most excellent soldiers. One might be inclined to think that the system therefore is of no great consequence did not further thought bring out the fact that the difference is simply that existing between the liberty-loving "Aussie" and the submissive Teuton.

Our army spirit approaches that of the Australian forces, but in our service we hold that the happy medium has in the main been reached. Our officers know that even if the regulations did not specifically prohibit their striking a soldier, such action is totally contrary to the spirit of our service. At the same time they are convinced that the best of leadership is not possible in a company where the captain plays cards with his men, takes them into his confidence concerning his personal affairs, or borrows money from his sergeants.

"Hard-boiled" Smiths and like believers in un-American methods have no recognized place in our military system, but unfortunately such excrescences will appear in any army under the strain of active service. Their faults, and many others less grave, are the results of inexperience. A most painful memory of the training camps is that of seeing a captain, himself in the service only a few months, strutting up and down in front of his company of bewildered recruits and of hearing him remind them that he was the "boss." Such men are by no means typical products of the regular service training, but unfortunately for our country's confidence in its army, their mistakes are magnified through the press to a degree that is totally unwarranted by the facts.

There need be no fear that the selected instructors will make such grave errors in training the youth of our land, for most of our officers, including even those of limited experience, have learned that our men can be led but cannot be driven; they have come to realize that, generally speaking, true respect and loyalty exist between our officers and soldiers. They see that these feelings prevail not because of the social intimacy existing between the captain or the lieutenants and the men under their command, but only because the officers have shown those qualities that command respect and inspire loyalty—the qualities of patience, self-control, approachableness, a fair share of courage, a sense of humor and of justice, an unflagging interest in the welfare of the organization, and a generous spirit both in lending aid and in extending credit where credit is due.

Of course, not all of our officers possess these qualifications, but those selected for the special work as military instructors may be expected to meet the requirements satisfactorily.

There is a human side to the training of troops which has long been recognized as most important by those whose

duty it is to work with soldiers. Prior to the World War, when our Army was small and the pay was not sufficient to make the service financially attractive, our military forces were maintained by the voluntary enlistment of some 30,000 young adventurers each year who wanted to escape from the spring plowing and who yearned to see the world.

Even in those days, when the average American father cared nothing about army methods or the benefits of correct military training because he knew nothing of either, it was recognized that the best instructors were those who had the knack of "getting along with men." In the future, however, with the apparent certainty of there being half a million young men to train each year, parental indifference will be changed to solicitude, and the human side of man training as known to our service will become of the greatest significance.

Instead of indifference, criticism may be expected, for, however patent the benefits may be, it is doubtful if military service ever can be or should be made attractive to men in the mass except for very brief periods. Even the submissive Germans emigrated by the hundreds to escape such service. The task, therefore, confronted by our instructors will consist of concentrating for short intervals of time and with large bodies of men upon the undoubtedly excellent features of military training, utilizing to the full their knowledge of the correct method of handling men.

It has been said that the acquirement of knowledge need not necessarily prove a painful process, but there is no denying that the imparting of knowledge as practiced in our Army involves the hardest kind of work. One who has not had experience as an officer in direct command of soldiers can scarcely appreciate the great demands upon nervous force and physical strength made by the administration and training of large bodies of men. The day is literally never done. The officer is pater familias, father confessor, disciplinarian, teacher, preacher, and general watch-dog for the men in his charge. He must know his sheep from his goats. He learns where to bear down hard and where to "walk delicately." He must be able to rebuke the indifferent man at drill while passing over the rebuked one's sleepy neighbor who lay awake the night before worrying because his mother had not received her government allotment check for three months. He learns to distinguish between the $5.00 "touch" for "crap-shooting" purposes and the genuine appeal for money to send home. He plays no favorites and he fails not to give credit for good intentions, even though the results have been disappointing. Although not accustomed to public speaking, he soon discovers that his men are entitled to candid and friendly explanations of the questions that rise up to perplex them, and he arranges for frequent, informal meetings where these questions are threshed out. He learns to hear both sides to every complaint, and the entire field of penology is open to him in handling those who have broken the regulations. He finds that he must avoid hasty, irascible criticism, thereby leaving his subordinates free to exercise their initiative without being hampered by fear of unmerited reprimand. He finds that he must keep his sense of humor working

overtime and must display such interest in his drills that dullness and dreariness for others are defeated. Through it all, he makes friends without becoming familiar, he harmonizes discordant elements and he maintains about his headquarters an atmosphere of congenial comradeship that is often much more valuable to him than technical proficiency.

In the words of the prophet, "it is some job," but the task may be approached with a fair degree of confidence, for such instructors are to be had. Even in the writer's circle of acquaintances there are many who daily meet the requirements satisfactorily, but who do not figure in the dispatches.

Philip Gibbs, the experienced correspondent, states that among the English generals who have recently appeared on the stage of war, there was none whose name might be used to conjure with, none whose personality reached out and aroused the devotion of men as did that of Kléber, of Ney or of Stonewall Jackson.

Perhaps the explanation is that the day is ended for personal leadership by the general officers, but this simply means that the direct command has passed to officers of lower rank without in any way changing the principle that the greatest faculty an officer, a leader or a teacher can possess is that of being able to inspire loyalty in the hearts of men.

Apparently the rules to be followed in arousing this feeling are not rigid. Within certain limits they vary with the leader's personality. The gifts of approachableness and sociability are oftenest found in a real leader, but there are exceptions even here. It has been said that the American, William Walker, the "King of the Filibusters," commanded the devotion of his troops to a degree seldom equalled. He was democratic in his dealings with them, he was stern but just, firm but reasonable, and he held himself aloof even from his officers, dining alone and in state. His men idolized him, as did his junior officers, and the latter gave no thought to their leader's lack of sociability since they felt sure that his eye was on them and that they could depend upon receiving fair treatment at his hands.

On the other hand, in his tribute to "The Beloved Captain," Donald Hankey, the English soldier, gives us an appealing picture of another type of leader that men love to follow and obey. The captain earned his title honestly for, far from being aloof from his men, he was unhappy if he was not in their midst, working and striving ceaselessly for the good of those in the ranks. He considered himself their protector as well as their guide. He freely spent himself, physically and spiritually, for their good, and he watched over them as a shepherd guards his flock. Without seeking personal intimacy with his soldiers, without attempting to override the rigid social lines of the English army, he was the servant of his subordinates.

Such a character is, of course, idealized, but fortunately the spirit of our service and of our government produces men who possess the qualities of "The Beloved Captain" to a sufficiently pronounced degree to fit them for the high responsibility of training our young manhood. The country will find that the instructors from our Army placed in charge of troop training will be men thoroughly imbued with the

conviction that the prime duty of an officer is to command the respect and loyalty of his soldiers. They will be men who realize that ours is a democratic army, that our people are quick to detect fraud and to resent abuse—in short, they will be men who appreciate the human side of troop training.

In the event it is decided by our Government that our half million of young men shall annually receive military instruction at the hands of the Regular Army, the duty will be discharged competently and at no risk that our country will ever be cursed with the cancer of militarism.

(I)

THE NEW NATIONAL FIGURE.

—Alley in the Memphis *Commercial Appeal.*

Defective Machine-Gun Matériel

By Captain C. A. Willoughby, 24th Infantry

UNTIL certain changes in machine-gun equipment are finally adopted and the modified material distributed to the service, the present equipment, especially that which pertains to carts, instruments, etc., will remain in use for a considerable period.

The simple modifications suggested herein will improve this equipment and can be made within the machine-gun company, without expense to the Government and without much effort.

Defective Gun-Chest.—The present type machine-gun cart has certain defects due principally to an effort to have a convertible type, suitable for either the Vickers or Browning machine gun.

With the final adoption of the Browning gun, all features peculiar to the Vickers should be entirely dispensed with. Many of the carts are in actual use. Certain simple changes can be effected without expense to the Government which will render the cart more suitable for the Browning equipment.

The gun-chest is entirely too large for the Browning machine gun. In spite of the clamp-blocks provided, the gun will move in its seat and is constantly shaken about. On rough roads it is liable to be damaged, especially in the rear-sight group.

Longitudinal Motion.—The gun-chest is too long. There is free space at *Y* and *X*. The grip moves in its groove *T* (Fig. 1) and there is nothing to stop the muzzle end from moving forward. This motion throws the rear-sight against the small block *Z*, in the center of the gun-chest cover, and damages the sight-leaf and rear-sight elevating

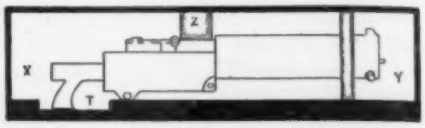


Fig. 1

Cross-section, gun-chest, Browning machine gun cart, showing the average gun in its seat, and points of forward motion.

screw. In any event, unless the gun is carefully and accurately placed in its seat, this block *Z* will strike the rear-sight.

Lateral Motion.—The gun-chest is unnecessarily wide, which results in considerable lateral motion of the gun. With the gun seated in place, there is free space at *Z* and *W* (Fig. 2) and the gun plays laterally, with constant vibration. This motion is not as damaging as the forward play.

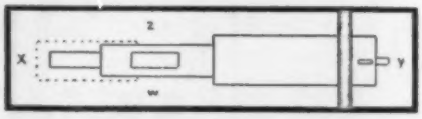


Fig. 2

Plan, gun-chest, Browning machine gun cart, showing the average gun in its seat, and points of lateral motion.

Proposed Cleats.—It is proposed to place the gun rigidly in its seat and prevent any forward or lateral motion. (See Fig. 3.)

By placing two small wooden blocks or cleats in the muzzle end of the gun-chest, the front of the water-jacket bears against the blocks, while the muz-

zle proper is not touched. This forces the grip in its sunken groove, which locks the gun in place and prevents any forward motion. The blocks are 2 inches wide, 4½ inches long and 1 inch below the top edge of the chest. They are seated squarely into the corners of the chest.

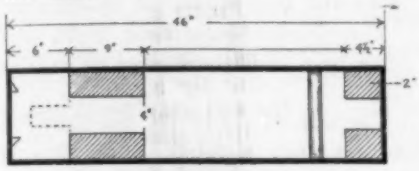


Fig. 3
Proposed bracing blocks, in gun-chest, to insure a rigid seating of the gun.

By placing two parallel wooden blocks or cleats along the inside of the gun-chest opposite the cover end of the gun, when the grip is firmly seated, any lateral motion of the gun is prevented.

The blocks are placed 6 inches from the grip end of the gun-chest and are 9 inches long, 1⅞ inches wide and 1 inch below the top edge of the gun-chest; the last dimension is arbitrary. An ordinary 2 by 4 block is suitable.

By keeping the gun rigidly in its seating, the block *Z* (Fig. 1) in the center of the gun-chest cover fits in its proper place between the rear-sight base and the rear end of the water jacket. It is believed, however, that this block is unnecessary. (Plates *a* and *b*.)[1]

With a strong canvas-cover, the gun fits snugly and immovably in its seat (Plate *c*).

Any company mechanic can make these simple improvements, observing the proper dimensions of the cleats.

THE BELT-FILLING MACHINE

Characteristics.—As long as the present cumbersome type of ammunition box and belt is used, the supply of ammunition will depend on efficient belt-filling stations.

It is generally assumed that the belt-filling machine, a very delicate and complicated appliance, may be nailed or bolted to an empty bulk-ammunition box, bench or table.

In order to properly function, the belt-filling machine requires a rigid, fixed base.

An ammunition box is not a satisfactory base, and to dismiss the actual location of the machine by assuming blandly that it can be put "somewhere" is not definite and is not doing justice to the importance of properly functioning reloading stations.

Location.—It is conceded that the average belt-filling station is with or near the cart. Position warfare or absolutely flat country are extreme conditions in which the carts are probably far from the gun emplacements.

By establishing a small relay, the average belt-filling station can be established at the cart, thus gaining one additional member from Nos. 7 and 8.

It is proposed to fix the belt-filling machine on one of the carts as a permanent fixture. The ammunition cart is of the proper height for comfortably handling the machine and affords a rigid and reliable base.

The triangular base plate of the belt-filling machine is placed over the rear end of the ammunition cart, in its center, with the top part resting on and bolted to the center retainer, which partitions the ammunition rack, while the front bears against the rear end of the cart.

A bolt and nut are permanently sunk in the center retainer and is always

[1]For all plates, see Pictorial Section.

available to bolt the belt-filling machine down.

A pin or screw, with the head removed, is permanently sunk into the rear end of the cart, in the center and projecting just below the center retainer. The front end of the belt-filling machine is held down by this pin, while the rear end fitting over the center retainer is securely bolted down.

In this manner, a logical and permanent location is provided for the belt-filling machine, insuring a rigid base and removing the elements of chance and makeshift from the possible uses of this important equipment. (Plates *d*, *e*, and *f*.)

Ammunition-Box Support. — As a belt is fed through the machine, the heavy, loaded end must be supported in order to relieve strain from the feed wheels and lever.

It is proposed to fix an ammunition box support on the rear end of the cart, to the right of the center and immediately below the belt-filling machine bolted in place, so that the belt can be guided into the box, serving the double purpose of relieving the strain from the gradually increasing weight of the loaded belt and filling the box without additional labor. (Plates *g* and *h*.)

To this end, a narrow iron spacer is nailed to a wooden block on the rear end of the cart, similar to the ammunition box support slide on the cradle of the machine gun, the tripod to receive and hold one ammunition box while the belt-filling machine is operated.

The company blacksmith can temper and shape the narrow iron spacer slide.

FIRE-CONTROL EQUIPMENT

Characteristics.—Excepting firing tables, the angle of site instrument clinometers, musketry rule and ballistic graphs, the fire-control equipment within the machine-gun company is bulky, viz., the range finder and tripod, the panoramic sights and tripods, place tables, etc.

Of these only the range finder has a standard carrying case, which is rather bulky and can be carried locally only.

The delicate panoramic sight, levelling base and tripod have no case as yet.

The articles are issued, but there are no provisions or facilities for carrying them in the field.

The Range Finder.—It is proposed to carry this equipment on the carts. The range finder in its case can be placed on top of the gun-chest of the spare gun-cart and strapped in place by means of the carrier straps. In order to keep it from rotating and undue friction, two wooden base blocks, curved to fit the case snugly, are screwed on the gun-chest cover, to receive the top and bottom ends of the case. (Fig. 4.)

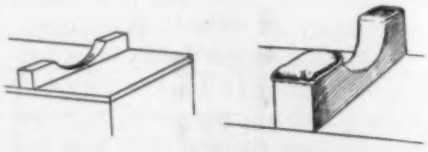


Fig. 4

Proposed seating block, for the range-finder on a gun-chest cover, Browning machine gun cart.

The top of these seating blocks can be padded with a strip of felt or soft cloth.

The Panoramic Sight.—The panoramic sight, with its compass attachment, levelling base and folding tripod, is not yet provided with a suitable carrying case.

The delicacy of the instrument requires a well-constructed leather case,

to be carried by a platoon liaison agent. Such a case can be carried in one of the tool chests of the ammunition cart.

The length of the case is determined by the triangular socket of the compass attachment and its width by the telescopic tube of the instrument proper.

Carrying Case.—The interior of the case must be provided with projecting and padded shoulders to prevent any play or lost motion and to fix the various projecting parts of the sight in their proper places.

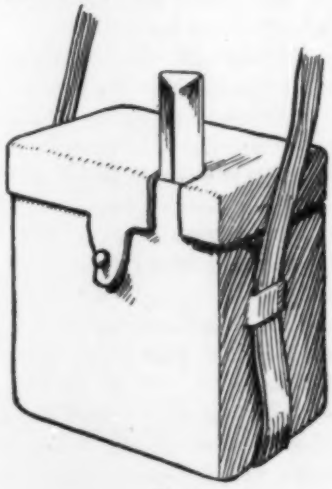
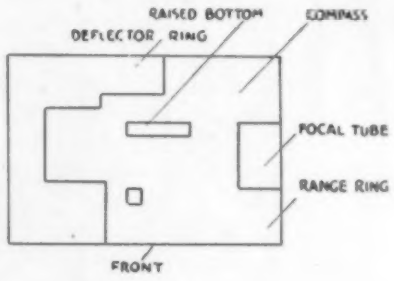


Fig. 5
Carrying case, panoramic sight.

Seating the Instrument.—The instrument is placed with the triangular socket up, the telescopic tube is on the right, the range and corrector rings on the bottom and to the left, the deflection ring to the front; the compass attachment, including the compass proper, fits underneath the deflector ring.

The Triangular Socket.—The triangular socket is an awkward feature inasmuch as it sticks out of the case. In order to save leather, an aperture in the cover will permit the socket to project, while the case is only large enough to hold the instrument proper.



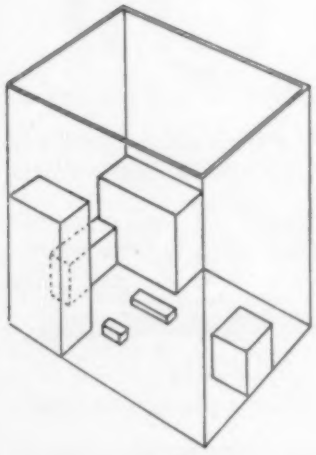


Fig. 6
Interior view, proposed carrying case, panoramic sight, showing padded seat for the instrument.

This socket could be materially shortened by providing a detachable section (2½ inches) with an interlocking screw.

The Tripod Case.—The tripod, with its delicate leveling base, requires a stiff case, similar to the range-finder case and into which it fits approximately. It can then be strapped to any cart of the platoon to which it belongs by means of the ample carrier straps on the front end of carts. It is here that the tarpaulin and the horse blanket are

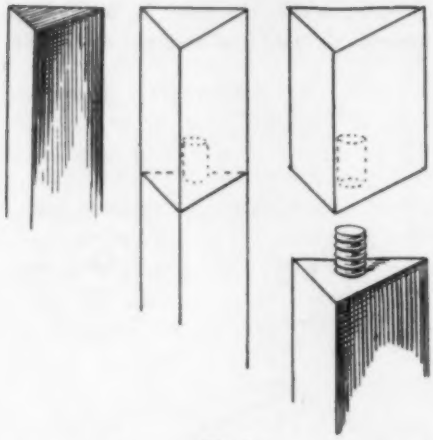


Fig. 7
Modified triangular socket, panoramic sight

habitually carried which afford a natural padding against shocks and jars

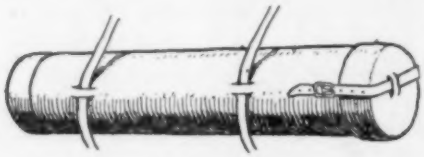


Fig. 8
Proposed carrying case, for the tripod

Such a case can probably be improvised in the company, to be made of stiff canvas (covering of the folding cot) with reinforced leather top and bottom.

One instrument complete can be carried within the platoon.

The Plane Table.—One plane table per platoon can also be strapped in front of any cart, preferably the ammunition cart; the carrier slats and straps are provided there for expressly that purpose.

The Clinometer.—The clinometer, to be carried by each corporal, is provided with a leather loop, in order that it may be carried on the belt.

With magazine pockets, first-aid pouch, bolo, pistol, etc., the individual belt is rather overloaded.

It is proposed to provide each clinometer case with a narrow leather strap in order to carry the clinometer as one carries the field glass.

Résumé.—The suggestions, as outlined, are not ideal, but can be carried out in each company with relatively small effort and at no expense to the Government. The fact that the equipment is on hand of course compels some effort to place and carry it properly.

The following table shows the fire-control equipment of the typical machine-gun company and proposed distribution and method of carrying:

Equipment.	1 Plat.	2 Plat.	3 Plat.	Remarks.
Range finder and case	.....	.....	.....	Strapped on spare gun cart.
Panoramic sight, case	1	1	1	Strapped on ammunition carts, 1st, 5th, 9th squads; case carried by agent.
Panoramic sight, tripod	1	1	1	
Plane table and tripod	1	1	1	Strapped, ammunition cart, 2d, 6th, 10th squads.
Angle of site instrument	1	1	1	Case, carried by agent.
Clinometer	4	4	4	Carried on shoulder-strap by corporal.
Fire control tables	2	2	2	Platoon commander. Carried individually.
Signal flags, etc	3	3	3	Carried individually.
Compasses	4	4	4	Carried individually.

Additional items are carried individually, viz., handbooks, message pads,

pencils, signal lanterns. It is only the bulky equipment which must be carried on the carts. Heretofore such items were put on an escort wagon and were consequently not available. Although the use of this equipment is relatively limited, it is desirable to have it available within the tactical units. During action each article is carried and operated by the proper agent.

THE "TWO-MIL TAP" AND ITS EFFECT ON THE TRUNNION SUPPORTS AND THE REAR ELEVATING GEAR

Defective Tripods.—It is noted that machine-gun tripods, Model 17, which had been in use for some time, developed marked lateral play along the trunnion pin, and in the tumbler pin of the rear elevating gear, which is new, tripods generally lock the gun securely in the cradle. There was as much as one-eighth inch space between the mount adaptors and the adjacent trunnion guides of the cradle, while the tumbler pin in the rear elevating mechanism was jarred loose and had considerable lateral play. The tripods had not been abused, but were subject to the unavoidably rough usage in elementary machine-gun drill.

Effect on Dispersion.—The play in the trunnion region directly affected the dispersion while firing, so that even experienced gunners had erratic and unusual shot groups.

Experimental firing on the 1,000-inch range showed a most convincing difference in shot groups with the same gun fired from a defective tripod and from a new tripod which had never been used before.

This peculiar play was evidently due to some specific usage since in new tripods the mount adaptor, trunnion pin and trunnion guides formed a solid and immovable unit.

The principle involved was found to be a rather plain one. With the gun mounted, the trunnion region becomes a fixed pivot. If the pintle is clear, the gun and cradle revolve freely and without mechanical friction, but if the pintle is clamped by the jamming pivot screw, as is ordinarily the case, a degree of force must be applied to swing the gun laterally, either by striking the muzzle end or the grip end. No matter how lightly the pintle is clamped—and it is usually too tight—there is always friction, always resistance against this lateral movement.

Evidently, by striking against one end of the gun, with the center locked in place, the force is immediately felt in the trunnion region, causing vibration, friction and wear on the metallic surfaces.

The "Two-Mil Tap."—This is exactly what takes place when the famous "two-mil tap" is used. The jamming handle is tight, the pintle is said to be "sticky."

By hitting the rear end of the gun "lightly," the muzzle is thrown to the right or left, supposedly two mils, but generally more.

This motion is called a "tap," *i. e.*, a gentle and relatively light blow. In practice it is a hard blow, generally more brutal than gentle, depending purely on the personal element and the individual skill of the gunner.

The severity of the tap is in proportion to the degree of tightness of the pivot screw. The correct tightening of the jamming handle is a very difficult thing. The gunner is in an awkward position, since he is behind the gun and must reach around the tripod to get at

the handle. As a general rule, the jamming handle is too tight and the gunner applies a harder tap.

This constant tapping soon disturbs the interlocking trunnion parts, *i. e.*, the space between trunnion guides is widened, the opening of the mount adaptor shows signs of friction, and eventually there is considerable lateral play. Another accompanying symptom is the slow but certain loosening of the tumbler pin.

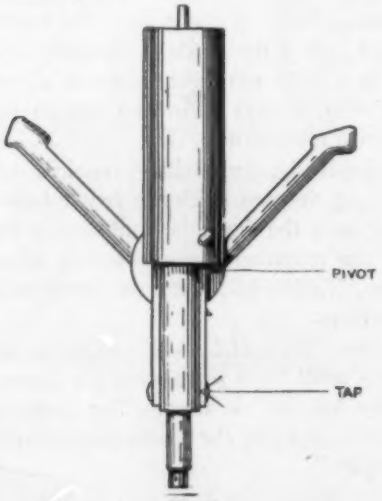


Fig. 9
The direction of the "two-mil tap."

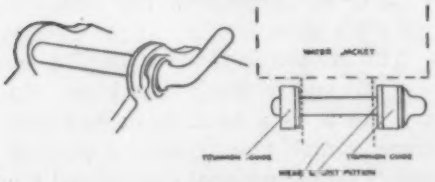


Fig. 10
The trunnion region, Browning machine gun, and mount adaptors, showing effect of the "two-mil tap."

Proposed Remedy: The Threaded Trunnion Pin.—This defect can be remedied by strengthening the trunnion supports by an extra thickness of trunnion guides with the trunnion opening threaded and the trunnion pin provided with corresponding screw thread, so that the pin screws into the trunnion guides and completely locks it instead of merely fitting in loosely, as at present.

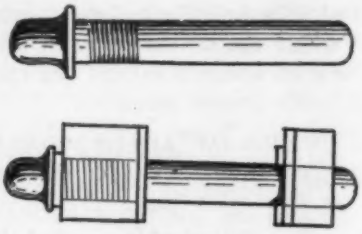


Fig. 11
Proposed trunnion guide and pin.

The Tumbler Pin.—The play in the tumbler pin can be checked by providing two outside washers, with a grip bolt through the center which can be tightened on the washers or released at will.

This change in construction is indispensable if it is desired to continue the archaic "two mil tap."

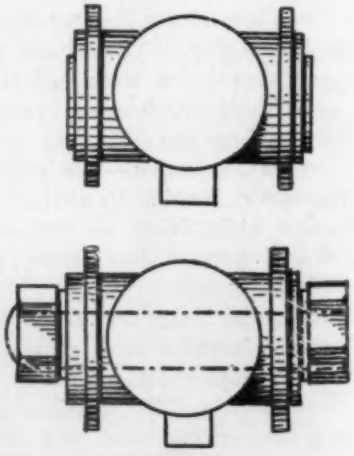
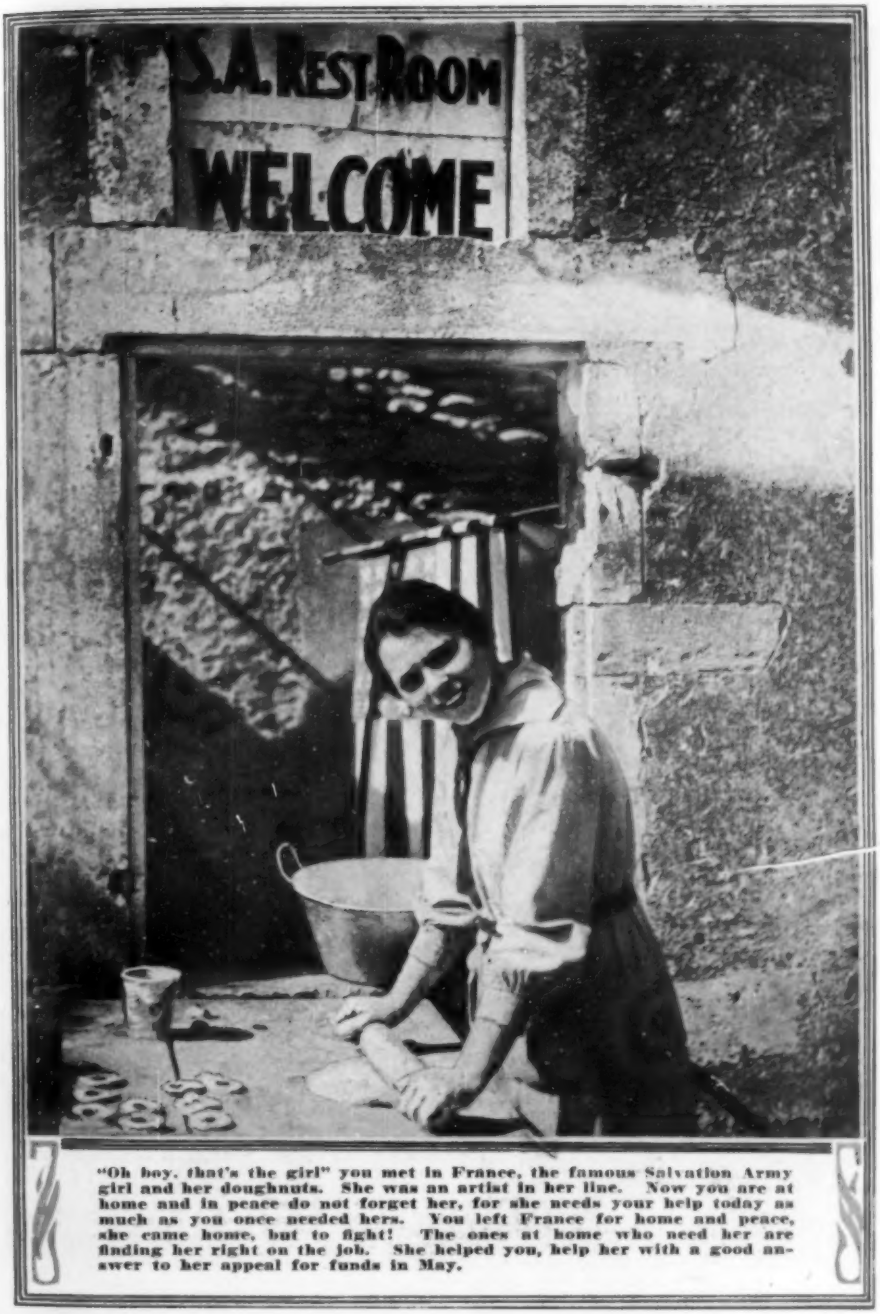


Fig. 12
Proposed tumbler pin.

In view of the above, it is believed that the two-mil tap is responsible for



"Oh boy, that's the girl" you met in France, the famous Salvation Army girl and her doughnuts. She was an artist in her line. Now you are at home and in peace do not forget her, for she needs your help today as much as you once needed hers. You left France for home and peace, she came home, but to fight! The ones at home who need her are finding her right on the job. She helped you, help her with a good answer to her appeal for funds in May.

MEMBERS OF THE MILITARY COMMITTEE OF THE SENATE

MEMBERS OF THE MILITARY COMMITTEE OF THE HOUSE

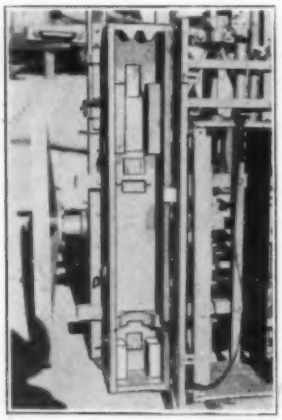


Plate a. — Typical gun-chest, with the bracing blocks in place.

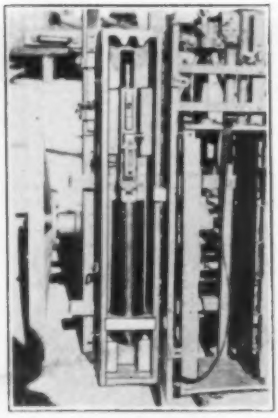


Plate b.—The gun firmly seated in the gun-chest fitted with bracing blocks.

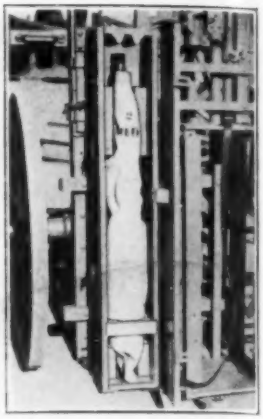


Plate c.—The gun seated in the gun-chest, showing the snug fit of the canvas gun-cover.

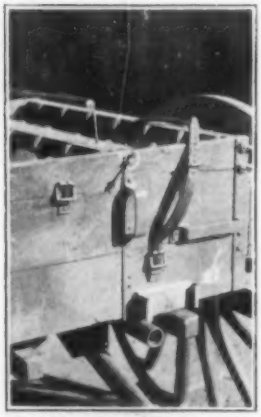


Plate d.—Browning M. G. cart, showing location of permanent bolts, to fasten belt-filling machine.

Plate e.—The belt-filling machine in position on the M. G. cart.

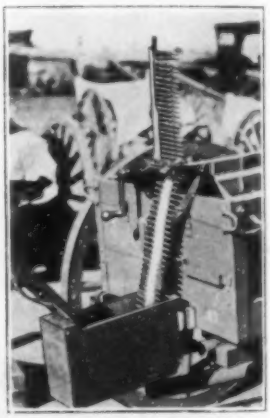


Plate f.—The belt-filling machine in operation, the belt feeding into an ammunition box.

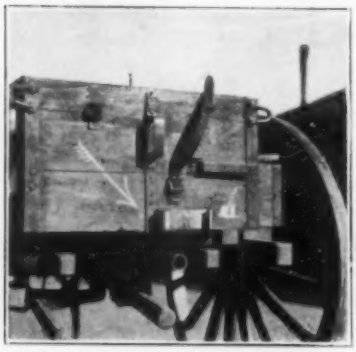


Plate g.—The ammunition box support, on the M. G. cart.

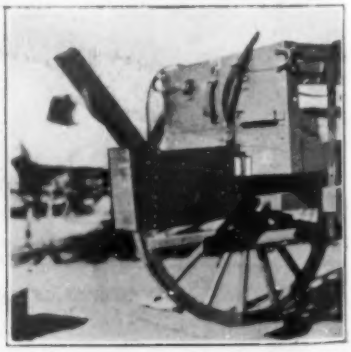


Plate h.—Ammunition box in position, on rear-end of M. G. cart.

the gradual wear in the trunnion region.

It is recommended that it be abolished as a machine-gun practice.

There is no necessity for it. Its effect eventually ruins the material, it is inaccurate, it is solely depending on personal skill and therefore variable, and it can be replaced by a scientific and thoroughly reliable mechanical appliance, which is already a part of the tripod, viz., the traversing worm gear.

The two-mil tap is a historic relic. It was the only means of deflection with the Vickers tripod, which had only a small brass pivot plate around which the socket revolved. There were no accurate means for determining the amount of deflection other than to assume that a certain blow or tap, if uniformly delivered, would result in a uniform amount of deflection, hence the "two-mil tap." Ten such taps represented 20 mils, and the fire-control officer had a crude means of ordering and checking deflection.

With the accurate direction dial on the tripod, Model 17, this practice is not only obsolete, but actually defeats the object of the direction dial.

The Traversing Worm.—The traversing worm gear is an excellent and scientific means for mechanical deflection, and its use, so far confined to barrage and indirect fire, should and can be made general. A slight turn of the traversing worm lays off any desired amount of deflection; the traversing worm dial, an accurate vernier, gives direct readings to 1 mil.

At a glance, this seems like a perfect appliance, and one wonders why the crude tap was not immediately dispensed with.

Unfortunately the traversing gear has its defects, by no means fundamental but rather impractical. The worm handle is on the left. The average gunner fires with his left hand bearing down on the grip while his right hand presses the trigger. The position of the left hand is typical, natural and efficient. To release the holding on the grip and reach for the traversing worm handle is not a natural motion. The handle should be on the right of the gunner.

The handle with its throw-off is too close to the left leg of the tripod and its jamming handle, especially when the latter is vertical.

A more important feature is the fact that one complete turn of the handle deflects 200 mils, consequently the slightest motion of that handle causes a marked deflection and it is very difficult to execute a two-mil turn. This could probably be overcome by enlarging the handle to a size like the elevating hand-wheel which would permit of a finer control of turn and provide it with a plunger and spring to make definite mil stops; the pitch of the thread of the worm gear will also have to be modified.

In this connection, the edge of the proposed hand-wheel should be serrated to afford a better grip. This applies also to the present elevating hand-wheel, which has a smooth rounded edge and becomes slippery, especially with oil dripping on it.

NOTES ON AMMUNITION SUPPLY

Ammunition Supply.—It is generally conceded that an ample ammunition supply is one of the burning problems of machine gunnery. This invites attention to the limbered combat wagon as furnished to rifle companies and its use with machine-gun units.

Its principal characteristic is that it is designed for (*a*) bulk ammunition boxes, wooden type, (*b*) infantry units, rifle companies; *i. e.*, it is *not* designed for machine-gun units and is consequently not an ideal or logical equipment, but merely a compromise.

This becomes strikingly apparent when the contents and carrying load of a combat wagon is analyzed.

The conclusion is obvious: machine-gun units should carry extra ammunition boxes in the combat wagon in lieu of the bulk boxes which are primarily designed for rifle companies.

The combat wagons assigned to machine-gun units should be constructed with a view to contain standard machine-gun ammunition boxes instead of bulk ammunition boxes.

Location	Table A		Table B	
Pigeon hole containers	No. boxes, bulk ammunition	No. rounds	M. G. amm. boxes ready loaded	No. rounds
Caisson, rear	8	9,600	36	9,000
Wagon, rear	6	7,200	26	6,700
Wagon, front	10	12,000	59	14,750
Total	24	28,800	121	30,450

Table A shows the number of bulk ammunition carried in their proper containers and the total number of rounds; Table B shows the number of small machine-gun ammunition boxes, carried in the same containers with the same transportation and a relatively slight increase in weight, resulting in 1,650 additional rounds.

The important fact, however, is that the lesser amount of ammunition under A, the only authorized method of carrying ammunition at present, is in bulk, in boxes, on bandoleers, which will have to be laboriously opened, the bandoleers emptied, the belt-filling machine, with its frequent malfunctions, set up, and time, energy and the men consumed in loading belts and machine-gun ammunition boxes, while in the same cubic space and with the same transportation a distinctly larger amount of ammunition can be carried in standard machine-gun boxes ready for use.

This points towards omitting all slide rails (*x*) and interior partitions (*y*), as on the present model, and providing hinged covers for the caisson and rear end of the wagon, to keep the small machine-gun boxes from falling out.

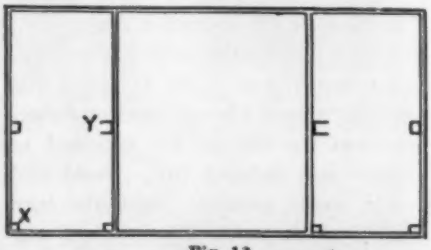


Fig. 13

The pigeon-hole containers, limbered combat wagon, with objectionable features

The present model, of course, can be used, but does not permit the solid stacking of machine-gun boxes because of projecting slide rails, cleats and irregularly spaced partitions.

It is believed that, without expense to the Government, partitions and slide

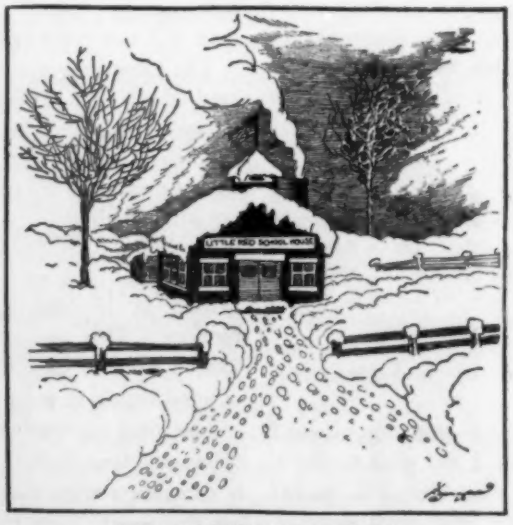
rails can be removed from the wagons (without affecting their structural strength) by local mechanics, in order to accommodate loaded machine-gun ammunition boxes and increase the efficacy of the combat train. This would necessitate an extra amount of spare ammunition boxes, in excess of the number now authorized and carried on the machine-gun carts. Any future model of combat wagon should take cognizance of the peculiarities of machine-gun ammunition.

In this connection, an expendable ammunition box and belts of 250, and preferably 500 rounds, are almost indispensable.

This would mean an enormous simplication of the ammunition supply, inasmuch as a chain of small dumps can be laid out behind each gun emplacement; the tactical advantages are obvious; the carts need not hug the firing positions and are less jeopardized; the relay carrier chains can be curtailed and reduced and the men grouped closer around the guns where they are needed in case of casualties. The gun and ammunition carts, emptied of their contents, become elastic links between the combat wagon and the guns' emplacement and insure a steady stream of ammunition.

With the present equipment of 17 boxes and a bulk ammunition as reserve, a certain number of men must be detached to operate a belt-filling station. With a machine which is delicate of construction and forever subject to malfunctions, the carts and combat wagon must be parked reasonably close to the firing emplacement. The process of opening bulk boxes and operating the belt-filling machine consumes time and effort and constitutes a drag on the firing points.

(I)



THE ANTIDOTE FOR "REDS."

—Thomas in the Detroit *News*.

Army Water Cart

By Lieutenant Colonel C. A. Meals, Infantry

THIS article is offered to solve the problem of getting water to the soldier in time of war under any and all conditions. The very foundation of this problem is horsepower, or, rather, mule-power. Those who saw our animals in France, skinny, underfed, half cared for and overworked, will appreciate the importance of the horse or mule in supplying the soldier with water.

Data taken from Kent and Trautwine on the subject of animal traction are indefinite, due to so many variables, such as the weight and condition of the animal, kind of harness and vehicle, conditions of roads varying as to grade and material. The data I have seen seem to be based on metal roads, but in America most of our roads have been made by the tracks of two-horse vehicles. A vehicle for hauling water must be built, not for pavement or macadam roads, but for natural earth roads or no roads at all, in fact for wet and soft soil.

Trautwine says:

A fair load for a single horse with a cart, at a variable walking pace, working ten hours per day, on a common undulating road in good order, is about half a ton, in addition to the cart, which will be about half a ton more. With two horses to this *same cart*, the *load alone* may be about one and one-fourth tons.

I assume that he means a metal road and he may mean 2,240 pounds for a ton. The point that counts is in his last sentence. We wish each mule to haul as much water and as little cart as possible.

For this reason I settle on a *two*-mule cart. This divides the weight of the cart between the two mules. Many of us are prejudiced against a two-wheeled vehicle, but it is proposed to design this one so that all objections to a cart will be overcome. The evil of a cart is the question of *balance*. If the load can be balanced and stay balanced, the cart has the advantage of taking less road space, turning in place, being easier to drive, lighter, cheaper and simpler. The two rear wheels of an escort wagon will support more than two mules can handle.

I decide on a two-mule cart because our roads are made by two-line teams. Our animals are used to such roads, and a mule to work single on them must be specially trained. Even then the load will not track well.

The great advantage is that the dead load of the cart is divided between two animals, and the ratio of our live to dead load can be that much greater. I do not mean two animals in tandem, nor one hitched alongside of the other which is in shafts. This is awkward and unmechanical. Let us forget the French system of hitching single animals in tandem. This design contemplates a tongue fixed to the axle by means of a divided frame running around the tank.

The ideal cart would be one whose cylindrical tank is so placed that its axis is concentric with the axle of the cart, but this would limit the capacity to the

diameter of the wheels and the necessary clearance. However, the center of gravity of the load would always be low and over the axle—two mechanical essentials. We will now start to build a logical and mechanical cart, using the two rear wheels of the escort wagon. We will limit the total load to 3,000 pounds and we want as much of it to be water as possible. We allow for reasonable strength in the cart and a small factor of safety. Since the cart will be moved at a walk, the factor of safety can be small.

Two hundred and fifty gallons of water weigh 2,000 pounds, and with such a capacity the cart must be made to weigh as little as possible. My cart when empty will weigh about 800 pounds not including the driver. (The present water cart built with shafts weighs over 1,200 pounds and carries 150 gallons.)

I disregard entirely all unessentials such as pump, hose, plumbing, sterilizing apparatus, and limit the cart to wheels, axle, tank, tank supports, tongue, frame to connect tongue to axle and tank, neck yoke, double tree, cushion on tank for seat, light pine tool box with hinged lid for foot rest, inch-pipe foot brake with escort wagon brake shoes, and half a dozen 3-gallon canvas buckets for filling. The specifications for the cart would be about as follows:

Wheels.—Rear escort wagon. These make for uniformity and interchangeability. They will support the load and are standard diameter for good traction.

Axle.—U-shaped with about 15 inches clearance and welded to spindles. To be of steel I-beam construction as light as possible.

Tank Supports.—Wooden beams 4 inches by 6 inches by 3 feet, placed on thin plates on the axle, the top curved to follow the contour of the tank, and fixed to the axle.

Tank.—Forty-two inches long and 40 inches in diameter. Made of sheet steel or aluminum alloy. Opening in top 14 inches in diameter. One and one-half inch spigots below in center just in rear of the axle. Four small faucets for filling canteens placed in rear just above sediment line. Partitions crosswise and lengthwise to within 3 inches of the bottom of the tank to prevent sloshing. Tank to rest on supports and secured by iron straps to rear of support and to forward end of steel plate connecting forward end of support to frame.

Frame.—Steel plates 4 inches by ¼ inch pass forward from the axle, hub high, and bent toward tongue around a 4 by 4 just in front of the tank and splice to the tongue at an angle of 45 degrees.

Tongue.—Escort wagon type dovetailed into 4 by 4 cross-piece and bolted to steel pieces, which are secured to cross-piece by angle irons.

Double tree.—Escort wagon type, crossing tongue at junction of steel plates.

Neck yoke.—Escort wagon type.

Seat.—Cushions on each side of opening on tank.

Tool box.—Light pine, to be used as a foot rest and as a support for brake.

Brake.—Foot, of inch pipe with escort wagon brake shoes.

Accessories.—Six 3-gallon canvas buckets, spade, ax, hub wrench and horse equipment.

The tank is so placed on the axle that when full it balances the tongue and

frame. The contents of the tool box will keep the tongue from rising.

REMODELING PRESENT WATER CART

The present water cart has so many defects, due to weight, balance and draft, that it is practically unserviceable. No animal can handle this cart day after day under field conditions and stand up. The cart weighs over 1,200 pounds, is equipped with unnecessary pump, hose, and plumbing, and is so out of balance that the load does not remain over the axle, but teeters forward and back, worrying the animal, tending to lift him and reduce his traction. The brake is of solid iron, the tool box is too heavy, and in fact the cart seems to have been designed without any thought of the poor beast upon which the soldier depends for water.

My plan is to do away with pump, hose, strainer and plumbing; substitute a lighter brake and seat, six 3-gallon canvas buckets, cloth strainer, screw the large spigot to the outlet pipe for emptying, and attach a single tree to ease the draft and give an even pull on both shoulders of the animal. One man with a G. I. bucket can fill the tank in five minutes at normal rate and can beat the time of the pump. Plumbing, pump, hose and connections are always getting out of order due to breaks, clogging or freezing. The soldier can fill his canteen from the Lyster bag or from his cup. In fact, he seldom uses the small faucets, which are constantly being broken off, and the leak has to be stopped with a wooden plug. My plan is to remove all this useless material, thereby taking off over 400 pounds of weight, revolve the tank 90 degrees horizontally, lower the tank 6 inches, and place the weight directly over the axle. This gives us a compact, well-balanced cart which weighs empty 800 pounds and when full 2,000 pounds, which is all that a wheel mule or heavy draft horse can handle under field conditions.

Another advantage of this plan is that the alteration can be made at any post without expense to the Government. The plumber and mechanic can do the work. The only additional material needed is a single tree, half a dozen bolts and six canvas buckets. One cart at Camp Gordon has been remodeled, and all the supply officers and enlisted men who have had experience with the water cart in the field are enthusiastic about the change and want to modify their carts at once.

In order that this change can be made throughout the Army in case this redesign is approved, clear and unmistakable instructions are here given.

Instructions for Redesign of Water Cart.—Dismantle cart by removing seat, brake, pump, hose, strainer, plumbing, tank, and wooden cradles that support tank. Remove platform on which pump rests and remove large spigot from pipe. Lower side pieces 3 inches by removing wooden supports, and rebolt side pieces to axle, using same holes and iron parts. (Side pieces connect shafts to axle.) Raise shafts to height when hitched and place the wooden cradles on thin iron plates over the axle, the left one 3 inches from the left side piece and the right one alongside the right side piece. (The iron plates prevent the axle from wearing into the wooden cradles.) Place the tank on the cradles so that the outlet pipe will fall one inch in *rear* of the

axle and midway between the left cradle and side piece. This will place the center of gravity of the tank just in rear of the axle and, when full, the tank will take nearly all the weight of the shafts off the mule. Reinforce the cradles front and rear by bolting to floor boards taken off the cart, which pass underneath and in turn bolt to the side pieces. Saw off the rear ends of the side pieces. Build a light inch material seat against the tank about 18 inches high and improvise a light tool box under the seat. Replace heavy, solid iron brake rod with inch pipe and wooden brake shoes and attach a foot lever to operate it. Discard old tool box, for it is too heavy. Attach a single tree and use traces that connect with the hames. By pulling on the shafts, the shoulders of the mule are subjected to every motion of the shafts and soon become sore. Attach the large spigot to an elbow extension that will reach just beyond the rear frame and fix it thereto. Close hole on top from which strainer was removed.

This cart as redesigned gives a mule all he can pull under varying conditions. The load is well balanced, and the dead load of the cart is reduced 33 per cent, but the improvement in balance is as important as the reduction in weight. Nothing essential is sacrificed. Capt. Richard M. Wrightman, supply officer, 6th Infantry, assisted with his company in the work of making over this cart.

Moving days

© 1919. *Morris for George Matthew Adams Service.*
The big brother to the Goddess of Liberty.

Hungerford in Pittsburgh Sun.
The nesting place.

Deacon: Brer Johnson, wont you all come fo'wa'd an' voluntah fo' de ahmy ob de Lord?
Brer Johnson (ex-soldier): No sah, reckons I'll wait fo' de draft!

Drawn for Cartoons Magazine by Jim Henderson.

Stinson in Dayton Daily News.
Ignoring a menace never removes it.

Chapin in St. Louis Republic.
Perhaps he will wake up now!

A PAGE OF CARTOONS

Arm Signals

By Contributor

IN THE din of battle, when the noise and confusion render the use of the voice impracticable for the transmission of orders and instructions from the leader to his men, we resort to signals. These must be simple, easily learned and remembered. They must be frequently used in training so that all may readily know them.

The soldier learns to do things properly by seeing them done—by having them demonstrated to him. The excellent illustrations of the Arm Signals prescribed by paragraph 43 of the Infantry Drill Regulations are here presented in the hope that they will be of assistance to our infantry instructors in the training of their men in this important subject.

The following arm signals are prescribed. In making signals, either arm may be used. Officers who receive signals on the firing line "repeat back" at once to prevent misunderstanding:

FORWARD
BY THE RIGHT (LEFT) FLANK
TO THE REAR

Forward, MARCH; By the right (left) flank, MARCH; To the rear, MARCH. Face and move in the direction of march; at the same time, extend the arm vertically to its full extent and lower it to the front (flank, rear) until horizontal.

QUICK TIME

Quick time, MARCH. Raise the right elbow to a position above and to the right of the right shoulder; extend the forearm to the left, right hand above the head.

HALT

Halt. Carry the hand to the shoulder; thrust the hand upward and hold the arm vertically.

Lie down (or take cover). Turn toward the skirmishers and raise the hand in front of the elbow, forearm horizontal; thrust the hand downward several times, palm toward the ground.

LIE DOWN OR TAKE COVER

DOUBLE TIME, MARCH OR RUSH

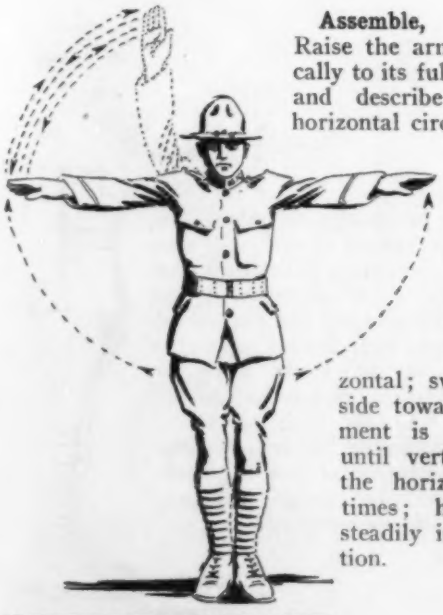
Double time, march or rush. Carry the hand to the shoulder; rapidly thrust the hand upward to the full extent of the arm several times.

Change direction. The hand on the side toward which the change of direction is to be made is carried across the body to the opposite shoulder, forearm horizontal; then swing in a horizontal plane, arm extended, pointing in the new direction.

CHANGE DIRECTION

As skirmishers, MARCH. Raise both arms laterally until horizontal. If necessary, lower the arm in the direction of march after completion of signal as in **forward march,** etc.

AS SKIRMISHERS



Assemble, march. Raise the arm vertically to its full extent and describe large horizontal circles.

As skirmishers, right (left) march. Raise both arms laterally until horizontal; swing the arm on the side toward which the deployment is to be made, upward until vertical and return it to the horizontal; repeat several times; hold the other arm steadily in the horizontal position.

AS SKIRMISHERS, RIGHT (LEFT).

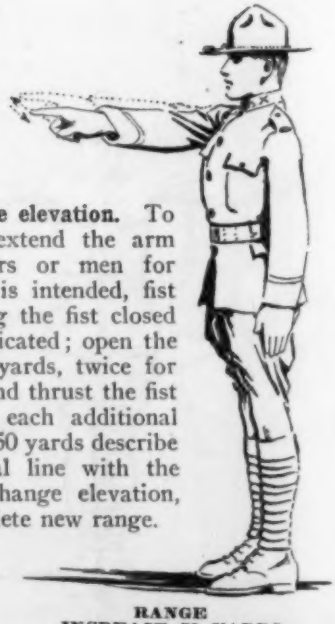
ASSEMBLE

RANGE
BATTLE SIGHT

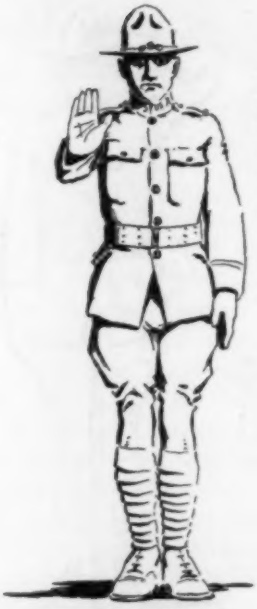
RANGE
INCREASE 100 YARDS

RANGE
INCREASE 500 YARDS

Range or change elevation. To announce range, extend the arm toward the leaders or men for whom the signal is intended, fist closed; by keeping the fist closed battle sight is indicated; open the fist once for 500 yards, twice for 1000 yards, etc., and thrust the fist upward once for each additional 100 yards; to add 50 yards describe a short horizontal line with the forefinger. To change elevation, indicate the complete new range.

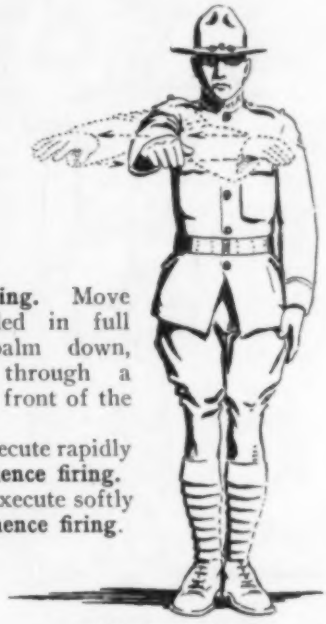


RANGE
INCREASE 50 YARDS



ARE YOR READY?
OR
I AM READY

Are you ready? or **I am ready.** Raise the hand, fingers extended and joined, palm toward the person addressed.



COMMENCE FIRING

Commence firing. Move the arm extended in full length, hand palm down, several times, through a horizontal arc in front of the body.

Fire faster. Execute rapidly the signal **Commence firing.**

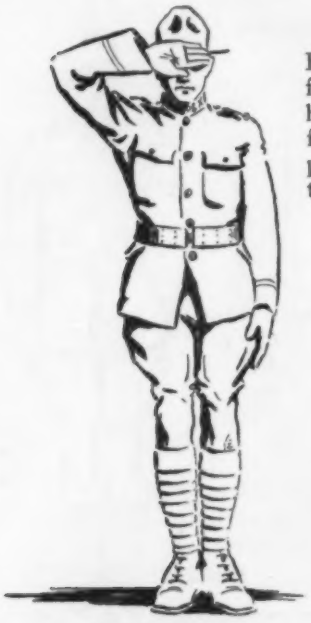
Fire slower. Execute softly the signal **Commence firing.**

TO INDICATE NEW TARGET

To indicate a new target. Extend the arm in full length to the front, palm to the right (left); swing the arm to right (left), and point in the direction of the new target.

FIX BAYONET

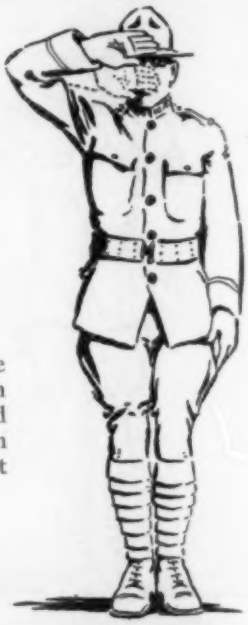
Fix bayonet. Simulate the movement of the right hand in **Fix bayonet.**



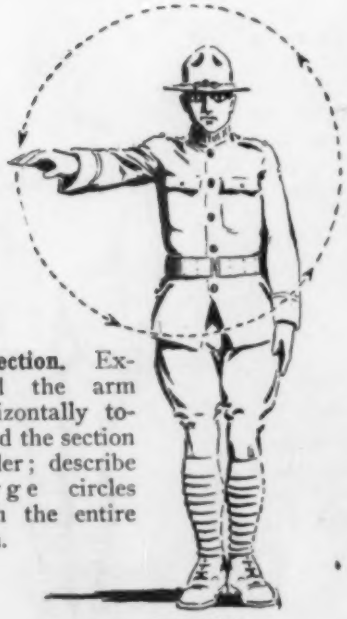
SUSPEND FIRING

Suspend firing. Raise and hold the forearm steadily in a horizontal position in front of the forehead, palm of the hand to the front.

Cease firing. Raise the forearm as in suspend firing and swing it up and down several times in front of the face.

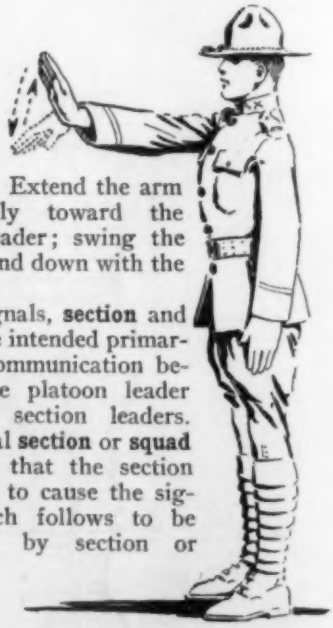


CEASE FIRING



SECTION

Section. Extend the arm horizontally toward the section leader; describe large circles with the entire arm.



SQUAD.

Squad. Extend the arm horizontally toward the section leader; swing the hand up and down with the wrist.

The signals, **section** and **squad,** are intended primarily for communication between the platoon leader and his section leaders. The signal **section** or **squad** indicates that the section leader is to cause the signal which follows to be executed by section or squad.

Medical and Surgical Relief for Soldiers

How the Bureau of War Risk Insurance is meeting the herculean problem of examining, rating and returning to physical usefulness minds and bodies wrecked in the Great War

THE war has brought the Government face to face with a brand new series of problems.

Long before the armistice was signed, Congress foresaw some of the necessities of the situation and, starting from the broad-angled viewpoint that a man who has been injured in the service of his country is not an object of charity but a person who is entitled to compensation and medical relief, exactly as is the man who suffers a hurt at the hands of industry, a wise legislative program was inaugurated.

This contemplates that the Director of the Bureau of War Risk Insurance shall take all the necessary measures to insure that every person who contracted a disease or suffered an injury in military service in the line of duty during the war with Germany shall be recompensed therefor, and that he shall receive such medical and surgical attention which will return him to health, or at least shall bring to him the maximum relief possible in his particular case.

Furthermore, should this ex-soldier, sailor or marine have lost a limb or eye, or suffered any hurt for which a mechanical device may be necessary, that such apparatus shall be furnished him without cost. In furtherance of this plan Congress has enacted enabling legislation, and at present is considering a bill which will further elucidate its purposes in this regard.

There is a man in Washington who sits all day long facing a gigantic map of the United States. On it is shown every railroad, town and hamlet in the nation. Colored pins locate the hospitals, dispensaries, medical and surgical consultants and examiners, all of this being the vast field machinery which the Government has put in motion to relieve suffering, prolong life, and return to efficiency the men and women whose minds or bodies may have been broken in humanity's war.

Someone asked this officer why he always sat facing this gigantic map, why he lifted his eyes to it so many times during the day. The answer was, "So that I may always keep before me the fact that the problem is national in its scope and can be solved only by the maximum breadth of vision."

When Congress in its wisdom passed the War Risk Insurance Act, little did anyone dream of its far-reaching effects. Manifestly it was the desire of Congress, expressing the will of the American people, that those men and women who had rendered military service in the war with Germany should be adequately recompensed for any injuries or disabilities which they might receive or which might be aggravated by their response to the call of duty. Not only was it intended that the injured person should receive a just remuneration in proportion to the seriousness of his disability, but also that the Government should employ every

means at the command of science to return such persons to health and as high a degree of physical efficiency as possible.

No human brain could have foreseen the puzzling maze of intricacies which would follow in the train of such a legal enactment. The tentacles of no mind could have reached out into the future and brought back impressions of the multitudinous variety of ways in which this beneficent measure would touch the lives and happiness of thousands of Americans.

At first glance the problem appears easy. If a discharged soldier, sailor or marine, army or navy nurse, yeoman (f) or marinette can show that he or she received an injury in service or suffered an aggravation of a pro-existing injury or disease, then compensation and medical and surgical treatment, if necessary, must inevitably follow. If it were so simple as this, every one of these persons would be able to arrange his compensation immediately upon his discharge from the military forces, and it would be unnecessary for the Government to employ special examiners and a corps of medical specialists in order to administer the Act with justice to the beneficiaries and to the Government.

But such is not the case. In the first place, it must be shown that a claimant was actually in the military or naval forces of the United States; secondly, that he suffered an injury or an aggravation of a pre-existing injury.

The Office of the Adjutant General of the Army and the Bureau of Navigation of the Navy are able to furnish the data required under the first head. It is not always so easy to arrive at a decision with regard to the second head.

A large number of cases are on record in which the man was discharged as in good condition, and within a few days was found to be suffering from serious trouble which was of such a nature as to make it absolutely certain that it existed prior to his separation from the service. For this reason it is not practical for the Medical Division to accept at their face value the reports of discharge boards. This is especially true when there is an absence of data. When boards have carefully reviewed a man's condition, their reports are regarded as corroborative evidence of the highest value.

Then, too, there is the question of those disabilities which appear some time after the man's separation from the service. Here it is necessary to call upon the Adjutant General and the Surgeon General for the man's medical record while in the service. This sometimes throws considerable light upon the question of determining whether military service had aggravated what would otherwise have been a very obscure condition. In every case the burden of proof is on the Government, and the man is always given the benefit of the doubt. This is in the interest of broad-minded, sympathetic treatment.

Nearly the entire eighth floor of the Arlington Building in Washington is occupied by the Medical Division of the Bureau of War Risk Insurance. The function of this division is to pass upon the medical aspects of claims made against the Government under the War Risk Insurance Act; to supervise the medical and surgical treatment of those discharged sick and disabled soldiers, sailors and marines who are in need of such services; to arrange their hospitalization; to secure for them the

artificial limbs and other prosthetic appliances which they may require; to secure physical examinations of these claimants; and to prepare the certificates of disability which will be their protection in years to come, even though they may not be in need of compensation or medical and surgical attention at the present time. In other words, it is the medical department of the largest insurance and employers' liability company in the world.

Surgeon General Rupert Blue, of the United States Public Health Service, has detailed the medical officers necessary to conduct this work, and Director R. G. Cholmeley-Jones, of the Bureau of War Risk Insurance, has assigned a large force of clerks, stenographers, and messengers to this division. If one could visualize this busy place, presided over by the Chief Medical Adviser, Assistant Surgeon General W. C. Rucker, and could sense the broad sympathy with which the Government is endeavoring to meet this post-war problem, the effect would be that of placing one's hand upon the pulse of the great American people.

A hand-truck pushed by two lusty messengers filled with claims of soldiers

Here comes a hand-truck pushed by two lusty messengers. It is filled with reddish-brown fiber folders, each having a brilliant red edge. Every one of these folders represents the claim of some man who has suffered a hurt at the hand of the god of war. These folders go into a large room where they are sorted and classified and from which they are dispatched in other trucks to the various sections of the Medical Division. Each of these folders represents some man in need of treatment or prosthetic apparatus, or some man who, by reason of his injury or disease, is entitled to compensation from the Government.

The sorted cases travel out by trucks to the various sections of the Medical Division. More than 5,000 cases pass through the Medical Division every working day, action being had on one case every four seconds. When the case reaches the section to which it is routed, it is carefully reviewed by medical officers of the United States Public Health Service specially trained in such work.

In one instance it is necessary to rate the degree of disability; in another, to order an artificial arm; in another, to pay a bill for the repair of teeth; this patient is to be admitted to a sanatorium; that unfortunate boy whose reason has been rocked by the thundering engines of war must be committed to an institution. Here the mother of an epileptic requires a consoling letter; there some officer in the field must be informed regarding the special needs of some particular case.

The organization of the division is simplicity itself. At the head is the Chief Medical Adviser, who is assisted by the Executive Officer. It is necessary that the division be in accurate and close touch with various governmental and quasi-governmental agencies interested in the problem and for this pur-

pose there is a liaison officer to take up questions with the U. S. Public Health Service, the Federal Board for Vocational Training, the Army, the Navy, the Marine Corps, the Red Cross, and the various volunteer organizations which are doing such magnificent work in assisting to rehabilitate the war wreckage.

The division itself is divided into eight sections: Internal Medicine, Surgery, Tuberculosis, Neuro-psychiatry, Eye, Ear, Nose, Throat and Dental, Prosthetics, Statistical, and Miscellaneous. The functions of these sections are pretty well indicated by their titles.

In the case of the sections of neuro-psychiatry and tuberculosis, the officers having charge of them have also charge of the same sections in the Hospital Division of the Public Health Service, thus making it possible to coordinate accurately the care of the tuberculous and the mentally injured with the anti-tuberculosis and mental hygiene program of the Public Health Service. In this way it will be possible to assist in the nation-wide movement looking to the control of the great white plague and the recognition and early cure of many cases of mental illness which are at present escaping observation.

The cases pass to the various sections for action and from them back to the mail room and to the other divisions in the bureau for such further action as may be necessary. It will be readily understood that one handling does not suffice for a given case. Each must be gone over many, many times, and will be gone over many, many more times in the succeeding years.

This explains why, although more than 5,000 cases are being administered each day, only some 107,000 different individuals have been the recipients of the ministrations of the Medical Division. Of these, more than 18 per cent were suffering from wounds incident to their military service; almost 15 per cent were the victims of tuberculosis, and not quite 11 per cent were afflicted with temporary or permanent mental disorders; about 4 per cent were gassed; 6 per cent had respiratory affections other than tuberculosis, and 2 per cent were paralyzed. About 17,000 of these cases have been treated in hospitals and about 7,000 men are undergoing hospital treatment at the present time.

It should be borne in mind that these cases represent less than 1 per cent of the total number of men in service during the war with Germany.

The total strength of the Army, Navy and Marine Corps to November 11, 1918, was 4,791,172. All of these are potentially patients of the Bureau of War Risk Insurance. To this number should be added the number of 200,300 men who were accepted by the local draft boards but were rejected by camp surgeons, and 50,000 men who were drafted and furnished transportation to camp but who were not mustered into service for reasons other than physical. The sum of these three groups was 5,041,470.

It is estimated at the present time that at least 641,900 men of this group were discharged from military service with some disability. Estimates which have been prepared by the Chief Medical Adviser on 513,500 of these men show that about 25 per cent of these cases of disability are due to diseases of the nervous system or mental alienation—about 76,000 cases. Thirteen per

cent suffer from diseases of the circulatory system and almost 13 per cent from diseases of the bones and organs of locomotion, and at least 9 per cent, or about 46,000, have tuberculosis.

To follow up a series of these cases through the division and see the way in which they are handled is to come into intimate contact with humanity in the raw. Within the brick-red fiber folder with its scarlet edge are encompassed the records of the most important happenings of many a life.

Here are certificates of birth, marriage and death, records of military service, reports of physical examinations, treatments received, operations performed, and letters from parents, wives, relatives and friends. In fact, it would be possible to write the complete biography of many a man from the data collected in this one small space.

Side by side, and handled in exactly the same way, are the cases of colonels, captains and corporals; white men, colored men and Indians; men who have no English, men who are illiterate, and men who have received their education at the finest institutions of learning in the world. The case of a "marinette" is beside that of a major general, while that of a nurse is next in order to that of the private whom she nursed back to life. They have, however, one thing in common—they have suffered a hurt in the service of their country. Very seldom indeed do they try to get more than their just dues, and many times they state that they do not wish compensation, all that they require being an opportunity to be cured of their diseases or healed of their wounds so that they may pursue again their peace-time avocation.

It is interesting to examine some of the typical cases. The following have been selected at random and are authentic except as to names and addresses, which must be omitted since a man's medical record cannot be made public property.

Here is a first communication:

Very seldom do they try to get more than their just due, all they require being an opportunity to be cured.

I was discharged from the U. S. Army some time ago and was fitted with a temporary arm. Now I would like to secure a permanent artificial arm. I have worn this temporary arm for over three months and think I am ready for the permanent arm. So please inform me how to get it.

Then follows this letter:

In reply to your letter, you are advised to report to the District Supervisor at 512 Garland Building, Chicago, Ill., for a complete physical examination and to be fitted with a permanent artificial arm. Present this letter together with your discharge paper as a

means of identifying yourself, and you will be furnished with a permanent arm. Transportation is enclosed, and return transportation will be given you by the officer who examines you.

This man, whose left arm was blown off in the Argonne by a high-explosive shell, is examined and all the measurements taken for an artificial arm.

Right here it may be stated that the War Risk Insurance Bureau specifies in all of its contracts that the manufacturer shall furnish the *best* artificial limb which he is capable of making; the Government supplies all of the extras, and, in the case of men who have to do heavy work and therefore run a risk of breaking their artificial limb, they are given two. As one of the amputated men said, "One for weekdays, the other for Sundays."

"One for week days—the other for Sundays"

The arm for this patient was manufactured and, at government expense, he was sent to the factory to try it on. Here in the file is his certificate stating that he has received the limb and that it is satisfactory in every respect, and next to it is a bill for $200.00 for this arm.

Approximately 3,800 major amputations have occurred as a result of the war with Germany. Of these about two-fifths were arms and three-fifths were legs.

Up to September 19, 1919, there were exactly 1,200 claims for artificial limbs. Of these, 621 were artificial legs and 579 were artificial arms.

While the artificial limb was well known to the ancient Egyptians and was issued by Julius Caesar to the forces who captured Gaul and invaded England, in its modern application it is essentially the product of American inventive genius. The type of leg which Rameses used to order for his men, and which was in general use by the mutiles of Pericles, consisted of a peg surmounted by a hollow wooden cone lined with leather, which was affixed to the body by means of a pair of homely suspenders. It was stiff and it was impossible therefore to "bend the pregnant hinges of the knee." This was remedied by a French gallant who in 1853 discovered that the emulation of "Hick, Hick, with his hickory limb," was unpopular in French society. He therefore inserted a hinge at the knee. While in the process of active perambulation a strong metal pin prevented flection of the limb, but when seated the gallant beau would pull the pin and bend the hickory limb with his hand, thus removing the danger of tripping some fair Duchess. On rising, the leg was straightened out, the pin reinserted, and the process of "dot and carry one" recommenced.

We have progressed far from that crude apparatus. The close of the Civil War necessitated the manufacture

of large numbers of artificial limbs, and American ingenuity has succeeded in producing an artificial leg which is little short of marvelous. The limbs are made of wood covered with raw-hide, which is shrunk on. They are very light, comfortable, and useful. Many persons call them cork legs in the belief that they are made of cork. They forget, however, that the cork leg received its name from a famous city in Ireland celebrated for its artificial limbs.

Artificial hands are, however, not quite so satisfactory. The arms themselves really function very well. Several enterprising manufacturers have, however, succeeded in producing fairly efficient artificial hands which function reasonably well when used with discretion and patience. The intelligent men who are willing to train themselves carefully are able to use these with a considerable degree of satisfaction. The present war has stimulated very greatly inventive genius along the lines of artificial limbs, and it is believed that before very long an absolutely satisfactory hand and arm will be placed upon the market.

All sorts and conditions of men and women find their way into the Medical Division, each with his or her heart full of his or her own particular problem. Here is the widow of a lieutenant-colonel, gloriously dead upon the field of honor in France. The next visitor is a hopeful, optimistic boy with tuberculosis of the spine, come to offer thanks for the brace which is relieving his bent back. A huge, hulking, prognathous shell-shock case is next. He is truly shell-shocked, having been blown up with high explosive in Belleau Wood. He has a fancied grievance and his attitude is such as to inspire terror. A quiet, peaceful talk follows in which it transpires that the apartment in which he is living is being remodeled, and the noise of the plumbers pounding on the pipes—"Honest, Doc, it fair makes me nutty." He was sent with an attendant to the newly opened psychopathic hospital at Cape May, where he received careful attention and accurate scientific treatment designed to ultimately knit up the raveled sleeve of care.

It is rather interesting to follow this man up. A few weeks after his preliminary interview he was seen again. His whole attitude had changed. He was happy, contented, and announced he was doing splendidly in a business college where he was taking a course at the hands of the Federal Board for Vocational Education.

An optimistic boy with tuberculosis of the spine comes to offer thanks for the brace which is relieving his bent back.

The next is a shy, timid mother, the lines upon whose countenance bespeak a long, hard, character-making battle

with life. Her brown eyes fill with tears as she tells about her son—"A good boy; he really isn't crazy, Doctor. The only trouble is he just hears voices." Admission is secured for this boy to the U. S. Public Health Service Hospital at Dansville, N. Y., and with a few words of consolation this timid little woman, whose aching heart has been somewhat lightened, goes on her way.

The next case is a shy little mother

A small-town couple from New England were sent to the bureau by the State Department. Their only son, evidently a fine, lovable boy who had been running a small store for his father at the beginning of the war, entered a training camp and disappeared a few days before the final examinations. The mother's attitude makes one feel that she is sheltering her son in his failure. Next he enlists in the Canadian Royal Flying Corps, and after eighteen months of successful flight over the crater-strewn fields of Ploegsteert, he returns to America, secures an aviation position, and then disappears, his route being marked by a flood of bad checks and erratic actions. At one place he purchases a dozen reversible coats and presents them to a friend; at another, he buys fifty parrots, and turns them loose in a church service.

"Can he be admitted to a hospital at the expense of the Canadian government?"

"Certainly."

"Where is he?"

They do not know. The Home Service Section of the Red Cross is requisitioned for aid; the country is flooded with telegrams, and twenty-four hours later this poor shell-shocked boy is removed from a filthy jail and placed in a clean, cool, quiet psycopathic ward.

And so this procession goes on hour by hour and day by day, and one by one these problems of human life are met and solved with kindly sympathy.

The mail is not less interesting. A mother in Virginia writes a four-page letter urging pitifully that something be done for her son, but neglects to sign her name or give the boy's name, address or organization. A boy in a large eastern hospital writes as follows:

Chief Medical Adviser: I am going to be operated on tomorrow, and I expect to die anyhow, but before I check out I want to tell you that I think you're a dirty bum, and everything connected with your bureau is rotten.

Immediately follows a reply telling him that if he will make his complaint a little more specific it will be carefully investigated, and expressing the hope that his operation may not be as unsuccessful as he expects. A few days later comes his reply. He seems to be getting along pretty well. Part of his complaint seems fairly well founded—an over-zealous clerk has refused to pay certain very legitimate bills.

In his letter he says:

You say the bureau is interested in the welfare of every ex-service man. Here is a living opportunity to prove it. I am in the hospital flat on my back without any money to pay for the treatment. It is bad enough to be sick, but when one has to worry about bills—well, it is hell. And closing—let me thank you for the prompt manner in which you replied to my letter. Frankly speaking, when I wrote I thought I would be beyond earthly care in a few days, and that is why I wrote it.

A reply is immediately sent forward. He is told that his hospital bills will be paid, and this is the close of the letter:

So far as this bureau is concerned, it is earnestly desirous of giving every one of its beneficiaries a square deal. More than this, it wants to do its work in a human, sympathetic, broad-minded way.

The time once was when letters were not answered as promptly as they are now. In the early days of the bureau there was such an enormous pressure of work—work which was wholly without precedent in the history of governmental enterprise—that it was not always possible to reply immediately.

Now the work of the Medical Division is and has been for some time absolutely current. Cases which formerly required several days of waiting are now handled by telegram, and in the handling of these cases it is an invariable rule to endeavor to give them the personal interest touch.

Here is a rather typical case in the Eye, Ear, Nose and Throat Section. A native of Spain, after having completed three years and seven months of service, is furloughed to the Reserves. He claims that he was injured in an automobile truck accident and that as a result he is suffering from impairment of vision. Careful examination reveals the fact that he is nearly blind in his right eye; that he is partially deaf in his right ear; is suffering from nasal obstruction, and that he has a depressed fracture directly over the right eye. As if this were not enough, he has a healed laceration of the left shoulder, the left kneecap, and a sprain of the wrist.

As a result of this claim, he was recommended for a temporary total disability rating, was placed in hospital for immediate relief of his nasal condition, and if this is found to result in part from the condition of his tonsils, these will also be treated. During the time he is in hospital his eyes will be refracted to determine whether or not his vision may be improved by glasses. He will also be carefully examined by expert consultants to ascertain whether or not anything can be done for the depressed fracture over his right eye. He will be kept under treatment until there is evidence that his condition has received the maximum improvement. During this time, advantage will be taken of the opportunity to give him some occupational therapeutics, and as a result this faithful soldier will receive the best which it is possible to give him.

Here is another case. A soldier, while engaged in bayonet exercise, received a wound of the head from the bayonet of the man behind him. As a result be became paralyzed. He could not sit up, walk, or rise without assistance. He suffered from epileptic attacks. He is given a temporary total disability rating, and later, if it is shown that his paralysis is not improving, that he is still very nervous, this rating will be made permanent. In spite of all that medical science can do there seems to be no probability of this man's cure. Therefore he will continue to receive this compensation as long as he lives.

The interesting feature of another case from a surgical standpoint is the fact that the patient had a piece of shrapnel lodged in the base of his skull —received during the violent fighting in the Argonne Forest last October. As a result of this wound the patient is going blind, and unless surgical measures are taken, this injury may result in the claimant's death. The removal of a foreign body from this location is an extremely delicate operation. There are few men in the world who are capable of extracting this fragment of steel from the base of the brain.

A telegram is dispatched to a surgeon whose reputation in this class of cases is international, asking if he will undertake this very delicate operation, and upon his favorable reply the patient was sent the breadth of the United States with a special attentant, placed in the only hospital in which this surgeon would operate, in a private room with a day and a night nurse. At the time of writing this article the shrapnel has been removed from the base of this man's brain and he is progressing rapidly to recovery. This would not have occurred had not the Government taken every means at its disposal in the endeavor to prolong the life and save the sight of this brave man.

Here is a Polish Jew, a tailor in civil life—a good boy who was always lively and liked to sing and read, was ambitious and was educating himself in night school. After a short period of service he found that he could not do his work; that he felt sleepy, but could not sleep; was worried. One night he was awakened by a severe pain in his head, but by morning this pain was better and he went on with his work. That night he could not sleep because he was worried. Finally it became evident that some mental change was taking place in this man, and he was placed under observation.

His mind was at first depressed, and he accused himself of things which he never did. Later he became apprehensive, depressed, worried, and longed for death. It became evident that he was hopelessly insane, and would so remain until relieved by the kindly hand of death. Under a cooperative arrangement with the U. S. Army he was taken to a state institution and there discharged from the Army and committed to the care of the Bureau of War Risk Insurance.

Here is a tuberculosis case—a chauffeur in civil life. He has been referred to the supervisor of the district in which he lives and he is placed in a sanatorium not far removed from his home. At the last report he was gaining weight and was improving rapidly.

The War Risk Insurance Act requires that the Director shall prepare and adopt a schedule of disability ratings and that this schedule shall be altered from time to time in accordance

with experience. At first blush it might appear that this was an easy thing to do. But when the vast number of diseases and injuries and the myriad of ways in which these may be combined are considered, it is seen that this is extremely difficult of accomplishment in such a manner as to work justice to the discharged soldier, sailor or marine.

As a result, the Medical Division has been obliged to adopt tentative schedules and to utilize these. Almost daily these schedules have to be altered in order to keep pace with experience. When a man has more than one injury, he receives a rating for each and then an additional percentage for the combination.

In the matter of amputations there is a difference between the two hands, and allowance is made for the length of the stump. In other words, an endeavor is made to administer the rating with justice to the wounded man. The loss of the little finger of the right hand, for example, counts as 4 per cent, but the little finger of the left hand in the tentative schedule now being used counts only 1.9 per cent. This rating would be reversed in the case of a left-handed man. If a man has a stiff joint, account must be taken not only of the particular joint involved, but also whether the angle of fixation is favorable or unfavorable.

Visual defects are exceedingly difficult to rate. Tables have been made which give a rating for all visual defects and combinations thereof. Ratings cannot be given for hazard. To do so would be to involve the Government in endless disputes and would probably work very little benefit to the injured person.

Hearing defects are rated in much the same manner as are visual defects. Considerable difficulty was met in the formulation of a definition of complete deafness. Since many persons are now made to hear by various telephonic appliances on the market, in rating total deafness the conduction of sound waves by the bones of the skull must therefore be taken into consideration.

The great bulk of the ratings which are given are temporary. This is done in the interest of claimant and Government alike. Later, as soon as a rating can be placed upon a permanent basis, this is done, but not until the case has been thoroughly gone over and the rights of the individual claimant carefully considered. Permanent total ratings are passed on by a board of three officers before they are finally made, and every means is taken to see to it that the rating is given with full justice to the ex-service man.

The law provides that any man who has received an injury in the war may apply for a certificate of disability. This is for the purpose of protecting his rights in the event that he may have trouble from his injury in the future. Undoubtedly a considerable number of men are unaware of their rights in this regard and are allowing their year of grace to pass without action on their part. In all probability Congress will see the justice of changing this phase in the law so that men who have allowed their rights to lapse in ignorance may receive this measure of protection.

The problem of hospitalizing the patients of the War Risk Insurance Bureau is an enormous one. Congress has already passed one act authorizing the Secretary of the Treasury to provide additional hospital and sanatorium

facilities to meet the necessities of the situation.

This phase of the work is administered by the Bureau of War Risk Insurance using as its agency the United States Public Health Service, which also has at its command the United States Marine Hospitals and the special hospitals which Congress has authorized it to secure by purchase or lease. These include a certain number of temporary hospitals which were turned over by the Army.

It will be necessary for the Public Health Service to provide additional hospitals to take the place of these temporary institutions as well as special institutions for the care and treatment of mental and nervous cases, the tuberculous and the epileptics. It is evident to even the casual observer that the number of persons who will apply for relief under the various acts will increase for a considerable number of years. Conservative estimates indicate that this increase will be rapid and continuous until at least 1929. The Public Health Service has already created a home for epileptics in Massachusetts, a psychopathic hospital in New York, and an institution for the care of neurosis cases at Waukesha, Wis.

It is not only necessary that many claimants under the War Risk Insurance Act shall be given hospital relief, but in many instances also to give them treatment in clinics. At the present time there are scattered throughout the country a considerable number of these institutions. Undoubtedly it will be necessary to increase them very materially.

It is believed that these clinics will serve a useful purpose as way-stations to and from the hospital. They will prove of enormous benefit in the matter of caring for the convalescent claimants who, while not requiring hospital relief, should be kept under observation for a considerable number of years.

A few of the necessities in the matter of utilities have been pointed out before. It is equally necessary that the Public Health Service have an adequate personnel with which to meet the very heavy burden which has been placed upon it. That service is fully aware of the necessities of the institution and is meeting them by increasing its regular and reserve corps. The Director of the Bureau of War Risk Insurance has, in addition, appointed a corps of special examiners to operate on a fee basis in various parts of the country. This has been done so that the claimants may receive examinations and every medical attention without prolonged travel.

Before we leave this subject let us go back and have one last look at the Medical Division of the Bureau of War Risk Insurance, that busy place where day in and day out the red fiber jackets travel from room to room carrying their messages of braveries performed, or wounds received, ano of diseases incurred for love of country. The work which the Medical Division of the Bureau of War Risk Insurance is doing is as broad as humanity itself. It touches every angle, every phase of American life and into the performance of these very serious responsibilities there is infused a spirit of broad, generous humanity and justice.

Group Games

GROUP games require a simple form or organization. The playing signal is usually given by some man in the group. In this type of training the individual is the unit, and if he fails to do his part well, he alone suffers. The events enumerated require that each man be attentive and more or less alert; that he play his part in the game when called upon to do so. The characters of the order and of the execution in group games as compared with those in the setting-up drill are radically different. The following games have been chosen out of hundreds that have been tried out in the Army and are suggested because they not only have been popular, but likewise because of their educational value.

The leader can start any of the games and with a reasonable injection of enthusiasm feel confident of its success. Many of the games are variable. The instructor in charge should seek to make these changes, thereby keeping up the interest and enthusiasm.

In teaching the games, those that are not continuous should be played two or three times. Generally a game has to be played through at least once to get a real conception of it. Games that are continuous, such as tag, circle, and ball games, should not be continued too long. The director should stop all games before the interest begins to wane.

Physical training officers must remember that supervised play may degenerate into work. Forty-five minutes a day should be the maximum—thirty minutes is ideal. The most satisfactory time in the day for games is the last hour in the afternoon or the last hour in the morning. The men can go directly to the bathhouse from either of these formations, a most desirable close to such activities.

Group games may be taught, using the whole company or a platoon as a base. The modern war strength company is almost too large, however, to be handled as a unit. Counting out absentees, a platoon usually has about forty-five or fifty men. Divide this group into three teams and results will be better than any other division. Six or eight or even twelve and sixteen teams of twenty to thirty men each, however, can be handled by a good director.

In promoting the games, the instructor should put a noncommissioned officer in charge of each team to act as captain. The captains act as coaches and are responsible for the fair play of their team. These captains should coach and not play, but try to stimulate enthusiasm.

Generally speaking, twenty men to a team or, if a purely group game, twenty men to a group, is the unit in numbers that will give the most satisfactory results. Any number from eight to thirty men may be used to good advantage, the larger number in preference to the smaller. Several of the games may be played very successfully with as many as forty or fifty participating as a unit.

Where there are two or more groups playing the most practicable way of

[1]From the Department of Physical and Bayonet Training, The Infantry School, Camp Benning, Ga.

teaching the various games is to arrange them in the formation needed to play the game and then demonstrate fully with one of the central groups so that all of the men as well as the group coaches can see. After one game has been played out, to teach another, reform the men, if a new formation is necessary, and demonstrate with one of the central groups as before.

1. HINTS TO INSTRUCTORS

a. Insist on fair play (enforce the rules).

b. Put pep into the game—make them snappy.

c. Keep the game going—there is no "Rest."

d. Do not let any man drop out without permission.

e. Make all noncommissioned officers as well as privates participate.

f. In starting a new game, be clear; talk little; demonstrate.

g. Develop the spirit of play.

h. To get the best results there must be discipline and good order.

i. Do not let a game drag out. Stop it while the men still want more.

j. Don't forget that most games may be modified to meet equipment at hand.

k. Especially encourage losers; winners do not need encouragement.

l. Soccer footballs, basketballs, or volley balls may be used in place of medicine balls in most instances.

m. Men finishing a relay race or falling out of an elimination contest fall out and reform in some formation (keep order).

n. In all tag games the playing area should be limited to about 100 feet square, or less, varying with the size of the group.

2. TAG GAMES

A. Formation: Players scattered promiscuously on play area. Team Tag: At signal, the player who is *"it"* chases runners. When *"it"* tags a runner the latter joins hands with him and the pair chase the runners. Runners tagged join either end of the line. Only players on the end of the line can tag. Game continues until all are tagged. Players running out of bounds join the *"it"* line.

B. Hook Arm Tag: Group forms in single circle, facing in. Players are paired, inside arms hooked at elbows, outside hands on hips. Two men in center, one is *"it."* The other is being chased by *"it."* The chased man runs about the circle either inside or out, and may hook the elbow of any player. The player he catches holds fast to him and the third party is then chased. If *"it"* tags man chased he then becomes the chased one and the one tagged becomes *"it"* and game continues.

C. Fence Tag: Played only where there is a fence, trench, narrow creek or something that may serve as a good dividing line. Played as tag except that man tagged and *"it"* have to be on the same side of fence, creek or trench at the time of tagging.

D. Three Deep: Group forms in double circle, facing in; the outside circle covering off the inside circle. Each pair should be 6 feet apart. One man is *"it."* *"It"* chases another man who may jump in front of any one of the men in the inside circle. He is then safe. The player in the rear of the one he jumped in front of is then the third party and *"it"* must chase him. The player being chased and *"it"* must keep on the outside of the circle except when jumping in front of player in inside

circle. Player when tagged becomes *"it"* and must chase the one who tagged him.

E. Heads and Tails: Formation—two lines back to back. One line named Heads and the other Tails. Leader tosses coin into the air and calls it as it falls "Heads" or "Tails." If Heads comes up or is called all Heads run to safety point, which should be about 30 feet away. The Tails attempt to catch them before they reach the safety point. Players caught join the team catching them. Team having the largest number of players at end of game wins.

F. Red Ace: Played by any number of players from ten to a battalion. Playing space between two parallel lines about 25 yards distant. Red Ace or *"it"* takes position in the center of playing space. At signal all players rush across and Red Ace or *"it"* attempts to tackle or hold as many players as possible before they have crossed line. Players caught become "Red Aces" or *"its"* and join the original player. Continue until all are caught.

G. Nest Tag: Group forms in double circle; outside circle facing in; inside circle facing out, covering off outside circle. Players opposite each other hold hands, forming a basket. One man is *"it."* He chases another man who may duck under the arms of any pair of men about the circle. The player being chased may face either man upon raising between the arms. The player at his back releases hands and becomes the party chased. The man in front takes the hands of the new man forming the basket. If the chased man is tagged he becomes *"it"* and chases the other man.

H. Mount Tag: (Playing area 100 feet square.) Played as ordinary tag except a man is immune to tagging if he is mounted on some other player. Player holding another mounted man is also free from tagging. More than one may mount the same man.

I. Maze Tag: From a column of squads formation have players extend to left and right until hands just touch when lifted to sides. Have the group right face and extend as before. Two players are placed at side of group—one is *"it"* and the other chased by *"it."* The game leader has the players raise hands to sides and hold them there. He then calls "Left Face," "Right Face," etc., at will. *"It"* and the party he is chasing stay in lanes formed by raised hands. If *"it"* tags runner the two reverse positions. Change players for *"it"* and runner, often.

3. ELIMINATION GAMES

A. Circle Tug: Draw a circle about 4 feet in diameter on the ground. Players form a ring about circle with arms about shoulders facing in. At signal the players attempt to draw other players into circle. Any player who steps into circle withdraws from game. Game continues until only one man is left.

B. Jumping Circle: Group forms in circle about 20 feet in diameter. One player stands in center holding a light rope about 15 feet long with a soft weight on one end. Player in center swings rope around so that players in circle have to jump it. Players who fail to jump drop out of circle. Continue elimination until entire group is put out. The last man out is the winner.

C. Rooster Fight: Two teams form lines facing each other at distance of 15 feet. Each player grasps either of

his own feet with both hands behind his back. At signal team hops forward. The object is to upset the players of the opposing team or to cause them to let go of their feet. Players knocked to the ground or forced to release upheld foot must drop out. Hands must not be used. Players knock opponents down indiscriminately. The team putting all its opponents out wins.

D. Circle Race: The players should be distributed around a track equal distance apart (10 or 30 feet varying with the numbers). At signal each player runs forward. Any player catching and tagging runner puts the tagged runner out of the race. The tagger runs forward to tag the man next to his front. Race continues until all are out but one.

E. Follow the Leader: Form the group in a column of files. Place someone who is more or less athletic in the lead. He starts off at a dog trot, the men following. The leader undertakes any reasonable hazard that he can find, such as jumping ditches, vaulting fences, clambering over tree limbs, etc. Men who fail to do anything that the leader sets drop out. If the leader fails on anything he attempts he is forced to withdraw. Only one attempt is allowed at a hazard. Game continues until all are out but one. The instructor should change leaders occasionally.

F. Medicine Ball Gap Throw: Two ropes are placed parallel about 20 feet apart. Men are arranged in column leading to one rope. First player hurls ball across intervening gap. (Director should indicate the style of throw at the beginning of the contest. All must throw alike.) The other players follow until all have thrown. Gap is widened. Players throw again. Players failing to make a successful throw are eliminated. Elimination continues until winner is decided. Only one throw allowed at each distance.

4. CIRCLE GAMES

A. Bull in the Ring: Group forms in a circle holding hands. One man who is termed the "bull" is placed in the center. If there are over twenty men in the ring have two "bulls." The "bull" tries to break out by charging the ring so the clasped hands are forced apart. If the "bull" gets out the players try to catch him. Player successful in catching the "bull" becomes "bull" for next game.

B. Cat and Mouse: Players form in ring holding hands. *"It"* or the "cat" is inside and the "mouse" is outside of the circle. At signal *"it"* attempts to tag the "mouse." If he does the player in the circle nearest the point of tagging becomes the "mouse" and the old "mouse" becomes *"it."* Then men in the circle should attempt to prevent *"it"* from getting to outside of circle to tag the mouse. If he does break through let the mouse in and keep the cat out. Cat and mouse should be replaced by players from the circle frequently.

C. Swat to Right: Group forms in circle, standing shoulder to shoulder, hands behind back facing in. One man, carrying swatter, runs around outside of circle and places the swatter in someone's hand. The man receiving it immediately hits the man on his right. The man who is hit runs around the circle until he is back to his starting position. The player with the swatter follows runner and swats him until he is in position. The player with the swatter then runs on and places the swatter in some other player's hand.

D. Milling the Man: Groups of

about fifteen men form small circle, sitting close together, facing in. One man is *"it"* in circle. With arms to sides he stiffens his body and simulates a dead man falling; men in circle prevent his falling to ground, pushing him back and forth. If he fails, the man responsible becomes *"it."* Body must be kept rigid to get best results.

E. Six Day Bicycle Race: Stake off field at four corners so that running about stakes would represent a track. Players are paired off—each pair representing a team. Players line up across track after drawing for places. At signal, one player mounts hips of other player who runs forward around track. After start, players may exchange rider places at will, and as often as they like. Race may be made two laps, three laps, four laps or more in length, depending on the distance around the track. Two hundred yards represent a good race.

5. BALL GAMES

A. Number Ball (playing area 40 feet square): Each player is given a number. When a player's number is called all others run away and he attempts to hit someone with the ball from where he stands. Player hit gets one "hit." The ball is then replaced in the center and man whose number was called last calls next number. A player getting three "hits" has to crawl through the legs of the team lined up, and gets paddled. Penalty for stepping out of area-line "hit."

B. Mount Ball: Group forms in double circle, facing in; players of inside circle 4 feet apart, outside circle covering off inside circle. Outside circle are "riders," inside circle are "horses." Riders mount on hips of horses. Horses must hold riders firmly. Riders pass medicine ball about. Horses endeavor to make riders drop ball. Horses must stay in place (shaking, sidestepping, wriggling, etc., are methods which may be used to make riders drop ball). Horses become riders and riders become horses whenever the riders drop the ball. Entire team changes, not single players.

C. Ball Tag: Group forms in a single circle facing in, players 4 feet apart. If less than sixteen players, one man is *"it"* in center. If more than sixteen, two men in center. Players in the circle pass a medicine ball about. *"It"* tries to touch the ball; if he does the player in the circle responsible for his touching it changes places with him and becomes *"it."*

D. Dodge Ball: One team is formed single circle, facing in, players 4 feet apart. Other team gathers inside the circle. Team forming the circle has medicine balls (all that are available) and attempts to hit players of team inside. The players hit drop out. The time it takes to force the entire center team out is recorded. The teams then exchange places and repeat, taking time again. The team taking shortest time to put opponent's team out wins.

Notes from The Infantry School

By Captain James M. Moore, Infantry

THE CLASSES

THERE are about two hundred student officers now at the school, forty of them being from the National Guard and representing not only many states but also the Hawaiian Territory. A variety of subjects are taught. The length of the courses approximate the year of civilian technical schools. These factors have made it necessary to abandon entirely the old garrison school methods of teaching, where one subject was finished before another was begun. The present schedules of the classes resemble those of universities where the same conditions exist. The student has work in several different subjects each week. Some subjects are continued throughout the entire term, and in some the work lasts only a few months. This arrangement corresponds to that of the full courses and half courses at a college, although it is not necessary to so designate them, since an officer graduates from the Infantry School because he has learned certain things and not because he has a certain number of courses to his credit. In this also the school is in line with the latest tendencies of the better universities, which take the responsibility of educating their students rather than merely exchanging degrees for marks.

The *Basic Class*, which entered in October, 1919, has had work in seven subjects during March. The number of hours devoted to each was as follows:

	Hours.
Administration	47½
Hygiene	7
Military Courtesy	6
Military Law	46
Tactics	65
Guard Duty	6
Drill	8
Exercise	30

Some of these subjects, notably Tactics, have been running the greater part of the winter and will continue well on into the spring. Military Law, on the other hand, runs only about two weeks.

The *National Guard Officers' Class* followed this schedule during March:

	Hours.
Administration	3½
Hygiene	6
Military Law	5½
Tactics	63
Drill	16
Machine Guns	15
Miscellaneous Weapons	10
Map Reading	25
Field Fortifications	8
Exercise	22

Comparing the *Basic* and *National Guard* schedules, it is seen that, during March, their work overlaps to any extent in one department only, that of Tactics, in which field work requires an added amount of time.

The new *Physical and Bayonet Training Class*, of five officers from each of the territorial departments of the United States, began work on March 1. Their course lasts four weeks and their schedule is quite different

from those of the other two classes. The *Basic Course* aims to turn out competent lieutenants, the *National Guard Officers' Course* to turn out competent company officers who shall also be able to instruct their subordinates to some extent, but the *Physical and Bayonet Training Course* is entirely to turn out instructors.

Here is the working schedule of the latter class for one week:

Organized Games — demonstration and practice.
Bayonet—practice.
Saber—practice.
General Athletics (basketball, football, baseball, track and field, swimming, league games)—instruction in coaching and interpolation of rules.
Anatomy and Hygiene—lectures.
Class Gymnastics — demonstration and practice.
Boxing—practice.
Wrestling—practice.

THE INFANTRY SCHOOL BRANCH OF THE U. S. INFANTRY ASSOCIATION

At the first meeting, when the branch was organized, it was decided that a division into sections would be advisable so that business could be transacted by the representatives of these sections without calling together all the officers at the camp. The branch therefore elected a president and secretary and then divided itself into the Twenty-ninth Infantry Section, the Student Officers' Section, the Instructional Staff Section, and the Experimental Division and Executive Staff Section. Each of these sections elected officers.

EXPERIMENT DIVISION

Among the many devices now being tested, the following are noted:

An interesting test of the fragmentation of hand grenades has recently been completed, as well as that of a new machine-gun cart. A harness for use by machine-gun units is now undergoing test. This is really a combination of harness and pack saddle. Experiments are being made with both the Phillips and Simons pack saddles. The former is an improved aparejo, and the latter is made of steel with a flexible arch.

The possibilities of placing the rifle sight on the receiver are being investigated. Twelve different types of sights are being used, including the Nash, Lyman, Warner, Czecha, Hatcher, and Wise models.

One test may result in an improvement in the butt stock of the Browning automatic rifle.

Varied Ground

Army Organization

We, like the rest of the world, have apparently the inveterate habit of attempting to solve military and naval questions by military decisions which are not based upon an estimate of the military situation. If a man is going to buy an automobile he first decides what he wants it for. He does not first concern himself with the question of how big a one he can afford. That's by the way. What he knows is, what he is going to do with it. That is an estimate of the situation.

Accordingly, before we take question of army organization we ought to decide what we want our Army and Navy for. It's a question which requires long and thorough discussion, and officers of the Army and Navy should be authorized to contribute to it. If they have anything to say, they should say it. Certainly the workman should be allowed to express his opinion as to the tools to be put in his hands. It must be remembered that if they say too much or in too intemperate a fashion, they are liable to court-martial. That should be sufficient protection against the revelation of military secrets, if there are any, and against attacks upon individuals.

As it happens, we have time for this discussion without much affecting the condition of military preparedness of this country. Say that 3,000,000 men passed through the training camps during this war and assume that they are of the average age of twenty-five. As the end of the military age is usually taken at forty-five this means that until 1940 we have the personnel for a large army composed of men who have passed through a period of intensive training.

Of course in 1940 the majority of these men will be too old physically for war, undoubtedly many of them will be dead, undoubtedly military methods will have changed in twenty years, and undoubtedly it would be impossible to take this class twenty years from now without reinforcing it with younger men. What this statement really means is that we have some five years before us for discussion without placing the United States in danger on condition that sufficient arms are kept in reserve and that an organization be drawn up on paper in which a certain number of reserve and regular officers are designated for certain posts by name, but in which by far the greater part of the personnel will be designated only by requirements and qualifications. In five years the intensive military education of this country will not have been utterly forgotten, and for a war which appeals to the people, as one for the defense of the United States, the men can be obtained easily enough if the plans for employing them are ready.

Certainly there will be a progressive diminution of military efficiency, physical and mental, as men grow older and their military knowledge grows rusty. The failure to recognize this was a great error at the close of the Civil War.

For many years we were accustomed to hear that a million men would spring to arms overnight, but it was measurably true for a good many years after that war, of course, if there have been

the arms to spring to. If the average age of the northern and southern soldier was twenty-five in 1865, and no one knows what it really was, this means that they were of military age down to 1885 and there were a great many of them. Furthermore, there was no great change in military methods during that period. For example, the guns of 1885 were not much different from those of twenty years before.

The great mistake was in permitting this knowledge to die out, in adopting no means for perpetuating it, for revivifying it. This was perhaps natural. The United States was remote from the rest of the world in those days and, as always, men refused to admit that they were growing old and not as good as they used to be.

All of which means that we can safely take a few years for earnest discussion as to what form of military training is expedient for the United States. We can take time without apparent danger on condition that we realize that our military capital is being consumed during that period and that the end of it must find us with a decision based upon estimate of our military situation.

JOHN R. M. TAYLOR,
Colonel, U. S. Army Retired.

Red Cross and War Benefits

A carefully prepared questionnaire, distributed by the American Red Cross, is proving highly successful in disseminating the assistance and information which the Government is anxious to extend to all former service men.

Despite Uncle Sam's efforts to render to every soldier and sailor and soldier's or sailor's family the benefits and compensations due the fighter for his services, despite the widespread advertising on the subject both in military and civilian haunts, in newspapers and magazines, and through the previous efforts of the Red Cross, there still remain throughout countrysides and in cities many boys who for various reasons have not received what is due them for the service they gave.

The questionnaire owes much of its effectiveness to the fact that it is devoid of difficult technical and legal terms, which, experience has shown, arouse distrust. The circular asks for information concerning the man's discharge and includes matters of Liberty Bonds, compensation, insurance, medical care and reeducation in proper sequence, closing with a direct request for information and cooperation of the soldier.

A Wisconsin Red Cross chapter evolved the questionnaire idea, and it proved so successful that it has since been adopted in all of the five states of the Central Division. Red Cross workers are amazed at the number of requests for information which follow a distribution of the questionnaire in communities where Red Cross chapters thought their work completed. In one community, where there appeared no more need for this sort of service, the returns asking for information on various subjects amounted to 65 per cent of the circulars sent out,

A widowed mother was saved from need and suffering through information obtained through this channel. While in camp, this woman's son, who had been the main support of the family, was killed by lightning. Ignorant of her rights or how to obtain them, the mother filed no claim and was in actual want when the Red Cross questionnaire was brought to her attention by a neigh-

bor. Inquiry elicited the information that during her son's period of service men were automatically insured by the Government, and by merely applying and furnishing necessary proofs, the mother receives in monthly installments the benefits from a $5,000 insurance policy.

This poor woman's case is only one of many demonstrating the lack of knowledge that exists concerning the personal rights of the men and their relatives.

The reply to the Red Cross questionnaire received from a discharged soldier suffering with heart lesion disclosed the fact that he had not applied for compensation thinking that illness did not entitle him to a claim. The Home Service Section interested obtained for him not only the compensation due, but medical treatment as well. Matters relating to the welfare of the family and the home also were adjusted.

The aged parents of two boys who had given their lives in the service were found to be ignorant of the provision made by their sons. Living in a rural community, not familiar with the language, they knew nothing of the Government's desire to make them Uncle Sam's wards until the questionnaire opened up avenues of information and service.

Even where no personal assistance has been rendered by the Red Cross, the questionnaire has proven of great value in enabling chapters to close their records and compile statistics which will be of lasting benefit to the Red Cross, revealing new fields of service to individuals and communities, important in the plans for peace-time work.

Foch's Ten Commandments

1. Keep your eyes and ears ready and your mouth in the safety notch, for it is your soldierly duty to see and hear clearly, but as a rule, you should be heard mainly in the sentry challenge or the charging cheer.

2. Obey orders first, and, if still alive, kick afterwards if you have been wronged.

3. Keep your arms and equipment clean and in good order; treat your animals fairly and kindly and your motor or other machine as though it belonged to you and was the only one in the world. Do not waste gas, your food, your time, nor your opportunity.

4. Never try to fire any empty gun, nor at any empty trench, but when you shoot, shoot to kill, and forget not that at close quarters a bayonet beats a bullet.

5. Tell the truth squarely, face the music and take your punishment like a man; for a good soldier won't lie, he doesn't sulk and is no squealer.

6. Be merciful to the women of your foe, and shame them not, for you are a man; pity and shield the children in your captured territory, for you were once a helpless child.

7. Bear in mind that the enemy is your enemy and the enemy of humanity until he is killed or captured; then he is your dead brother or fellow-soldier, beaten or ashamed, whom you should no further humiliate.

8. Do your best to keep your head clear and cool, your body clean and comfortable, and your feet in good condition, for you think with your head, fight with your body, and march with your feet.

9. Be of good cheer and high cour-

age; shirk neither work nor danger, suffer in silence, and cheer the comrades at your side with a smile.

10. Dread defeat, but not wounds; fear dishonor, but not death; and die game, and whatever the task, remember the motto of the division, "IT SHALL BE DONE."

¶

Army Commands in Civil Life

Commands for troops in action and in drill need not fall into disuse with the end of the war. Most of them may still be used with telling effect in civil life. As, for instance:

Traffic cop to line of motorists: "In place, halt!"

Busy business man to waiter: "Double time, march!"

Young woman to her returning soldier fiancée: "Present arms!"

Shopper to saleswoman: "Charge!"

Swimming instructor to his pupil: "Fall in!"

Irate mother to daughter, who has applied rouge: "As you were!"

Hotel clerk to bellhop: "Front!"

Modiste to customer in hobble skirt: "Half step, march!"

Impatient father to young men staying late with his daughters: "Company, dismissed!"

Tailor to customer he is fitting: "About face!"

Discerning mother to her little son after his bath: "Inspection, arms!"

Economical landlord to his prodigal furnace-stoker: "Cease firing!"

¶

Universal Training to Be Issue Until Law

Despite the decision of House Democrats to oppose it, and although "a majority sentiment of Republicans" also is against it, universal military training, Representative Olney, Democrat, Massachusetts, declared in the House, will continue an "issue until enacted into law."

Representative Olney, who is a member of the House Military Committee, disclosed that ten of its members favor including the plan in the army reorganization measure, while nine oppose it and one is doubtful.

Taking issue with Republican Leader Mondell, who recently said the system would cost one billion dollars a year, Mr. Olney cited figures compiled by the War Department, showing that 350,000 men could be trained in 1921 for $99,800,000; 400,000 in 1922 for $113,000,000; 450,000 in 1923 for $127,000,000, and 465,000 in 1924 for $131,000,000.

¶

Steel Pay—Army Pay

What would the Kenyon Senate Committee have said if the United States Steel Company had come forward with the statement that it had not increased the pay of its employes since 1908 and in its defense had advanced the arguments presented by your Congressman? The country and the committee would have been so outraged that the Steel Company would have been compelled to capitulate on the spot. As a matter of fact the company showed that the wages of its men had been increased 131 per cent, not since 1908, but since the beginning of the war. Again in the present coal controversy the minimum advance proposed by Mr. Garfield, and which the miners have refused to accept, fully meets the increase in the cost of living. No one thought of making a lesser proposal. Even the Government is ready to go the

whole road when it deals with organized labor, as witness its dealings with the railroad men. Does Congress wish to lay itself open to the charge of dividing its employes into two classes for the purpose of pay, those who are organized and daily threaten the existence of the Government and those who, though unorganized for the purpose of advancing their own interests, have just saved the Government once and are ready to defend it again?

¶

Causes of Prolongation of World War

Referring to the causes which determined the length of the World War, Field Marshal Sir Douglas Haig, Commander-in-Chief of the British armies, in his final dispatch on "The Features of the War," states:

In the first place, we were unprepared for war, or at any rate for a war of such magnitude. We were deficient in both trained men and military material, and, what was more important, had no machinery ready by which either men or machinery could be produced in anything approaching the requisite quantities. The consequences were twofold. Firstly, the necessary machinery had to be improvised hurriedly, and improvisation is never economical and seldom satisfactory. In this case the high-water mark of our fighting strength in infantry was only reached after two and a half years of conflict, by which time heavy casualties had already been incurred. In consequence, the full man power of the empire was never developed in the field at any period of the war.

The second consequence of our unpreparedness was that our armies were unable to intervene, either at the outset of the war or until nearly two years had elapsed, in sufficient strength adequately to assist our Allies. The enemy was able to gain a notable initial advantage by establishing himself in Belgium and northern France and throughout the early stages of the war was free to concentrate an undue proportion of his effectiveness against France and Russia. The excessive burden thrown upon the gallant army of France during this period caused them losses, the effect of which has been felt all through the war and directly influenced its length. Just as at no time were we as an empire able to put our full strength into the field, so at no time were the Allies as a whole able completely to develop and obtain the full effect from their greatly superior man power. What might have been the effect of British intervention on a larger scale in the earlier stages of the war is shown by what was actually achieved by our original expeditionary force.

¶

The Emergency Ration

THE EDITOR:

In reference to Colonel Brown's article may I suggest the following?

Without intending to find fault I think the following objections are generally held against the emergency ration:

It is issued in packages each containing an entire ration. Consequently, unless a detachment consists of three men or multiples thereof, it cannot be divided conveniently. Even then some men will be carrying more and some less than their proper supply most of the time. If each man uses from his haversack meal by meal, most of the time he will have a partly opened can in an unsanitary and unappetizing condition. Americans are accustomed to eat three meals a day, and these rations should be issued in packages each containing not more than one-third of a ration.

The emergency ration is also issued in one hodge-podge, a mixture which is unpalatable to most men and yielding little variety.

The comparatively large packages are unhandy and difficult to pack comfortably in the haversack.

It is suggested to use cans of corned beef, tongue, evaporated milk, deviled ham and packages of cheese, roasted and ground cereal, preferably sweet corn, crackers or hard bread and perhaps coffee. Most of these articles can be subjected to hydraulic compression before canning or wrapping. The dry articles can be wrapped in tinfoil, oiled paper or the like.

It is important that each can or package contain only enough for one meal for one man. So far as practicable a man's preference could be consulted in making issues. Men may often swap with each other. The packages should be flat, to lie easily in the haversack or pocket.

As regards cans, the altitude or depth of a common tin circular cylinder may be reduced until the can is brought down to the proper small size. It will then be flat and can still be made by the same process as ordinary commercial cans. This idea is not original with me. So far as I know, it was first suggested by the present general of the Army. Possibly in time convenient flat cans with round corners could be designed which would be still better.

E. P. PENDLETON,
Colonel, Retired.

Opportunities in the National Guard

THE EDITOR:

In view of the developments in Congress on the subject of our future military policy, it is apparent that there will be small prospect of any of the Reserve Officers securing field training during the ensuing year, because military training seems to have gone by the board at this session of Congress.

I note with great satisfaction that the INFANTRY JOURNAL has established a section for the instruction of Reserve Officers, and congratulate you upon this feature of your publication.

The best information now obtainable indicates that very likely there will be approximately 87,000 Reserve Officers in the Officers' Reserve Corps by the 1st of July, and I feel sure that the following conversation which occurred in the city of Washington recently will prove of interest to some of your readers of the Reserve Officers' Section of the INFANTRY JOURNAL.

I was recently accosted by a Reserve Officer in the city of Washington whose remarks were about as follows: "Look here! I am a member of the Officers' Reserve Corps, and have been for some time, and I'm not getting anything out of the position at all; in fact, I'm forgetting all that I ever knew. I don't get any opportunity to refresh myself, and I would like to know what the National Guard offers to a fellow who has an interest in military matters. I am so stale right now that I would have to dig into my books to take control of a company at the present time. Has the National Guard anything that would interest me?"

To which the following reply was made: "The Judge Advocate General has ruled that under the present law an officer cannot hold a Reserve Officer's commission and a commission in the National Guard at the same time, because the two positions are incompatible; yet, in the Act of June 3, 1916, Regular Officers on the active list are authorized to accept commissions in the National Guard. The only thing the National Guard can hold out to a Reserve Officer under the present law is that he resign from the Reserve Corps and secure an appointment in his appropriate grade in some organization of the National Guard. The present law will require him to attend not less than forty-eight drills of at least one and one-half hours' duration during a year. For this instruction a National Guard officer will receive from $240 to $500 per year from the Federal Government. He will also be required to attend a field training period of at least fifteen days during which time he will receive the pay of his grade in the Regular Army. Furthermore, you officers of the Officers' Reserve Corps are more or less the cream of the emergency officers

who served overseas. You will, by joining the National Guard, be able to keep in touch with military matters and refresh your military knowledge, but the greatest benefit will be the good which you will do our country by transmitting to the members of the National Guard the experience you have gained during the great World War. As long as you remain in the Reserve Corps you can be assured that in case of another selective draft, you would be very likely called as an officer and not as an enlisted man." This officer, much to my amazement, said, "Say, where is the office of the Adjutant General? Me for the National Guard."

In connection with this little conversation it may be of some merit to call attention to the fact that the National Guard as contemplated can very readily absorb 12,000 Reserve Officers. With a supply of 87,000 such officers, it must be apparent that those who apply first will be in the preferred class, for only one out of seven can be placed.

The National Guard desires efficient officers, and the Reserve Officer can be assured that no body of men are more willing and eager to receive military instruction than the men of the National Guard. It has been recommended to the House Committee that National Guard officers be appointed from the Officers' Reserve Corps, and if this provision becomes law, a resignation from Reserve Corps will not be necessary.

Sincerely yours,
JOHN W. HEAVEY,
Colonel, Infantry, U. S. Army.

①

Pointers for Noncommissioned Officers

You are the team captain of your squad, section or platoon. To be a good one you must be a firm disciplinarian. You must develop and make use of those qualities that characterize natural leaders of men.

In your dealings with the members of your unit you must have their respect, their unhesitating and willing obedience, and their enthusiastic loyalty.

Never appear before your unit unprepared to play your part in the game. This means that you must have a superior knowledge of it. If the men of your squad know more than you do, your task as a leader is doubly difficult.

Don't try to bluff your way through. In the military game every man is measured on the same yardstick—military efficiency. If you reach only 24 inches

up the stick, buck up and get the other 12 inches into your system as soon as possible. A bluff may go for a short time, but you are sure to be discovered early, and then your value as a team captain is gone. You can't fool all your men all the time.

A popularity born of ability and justice is to be envied. That produced by lax and easy-going methods, favoritism, winking at delinquencies and overlooking failures in the performance of duty, is a delusion and snare. Such popularity fades when the real test comes and changes into disrespect, insubordination and contempt.

Don't waste the time of your unit. Plan your work so as to get the most out of the time allotted to you.

There are few squads that need instruction in the position of "Rest." Keep moving—not merely for the sake of moving, but for the purpose of employing all the available time. When you give your squad or section about three movements and then command "rest," and keep this up for a while, they get the idea that you are resting them for the purpose of thinking up something else for them to do.

Don't get excited. In an emergency you must display perfect self-control. Remember that your conduct will control that of your squad and, if it is not as it should be, disaster is sure to follow.

Give your commands in a clear, firm tone of voice. If you are weak on this point go out in the woods by yourself and practice. A command slovenly given will be executed in exactly the same manner.

Never give an order like this, "One of you men do thus and so." Always pick out your man of the group and address the order kindly to him, but in no uncertain terms. Be careful to tell a man just what is wanted, and be sure that he understands it. This eliminates the possibility of a misunderstanding of an order.

(I)

"WHENCE, ALL BUT HIM HAD FLED."
—Ireland in the Columbus *Dispatch*.

Editorial Department

The Pay Bill in Congress

In directing public attention to the unfortunate condition of the Army and Navy and the status of the pay bill Senator Wadsworth performed a distinct service to the country. Stepping to the limits of the rules which prohibit criticism of one branch of Congress on the floor of the other branch, the chairman of the Senate Committee on Military Affairs in a brief statement covered the whole situation. He first outlined the causes of the wholesale resignations which have more than decimated the Army, and of the desertion of petty officers which have alarmed the Navy.

Briefly put, these causes are the greatly increased and steadily increasing cost of all necessities, coupled with the attractive emoluments of private employment. The one operates from within to force officers and men out of the Army, and the other from without, pulling them into civil life.

Senator Wadsworth then exonerated the Senate from blame and put it squarely up to the House. Having pointed out that the Senate had passed the pay bill, he continued:

> I think the Senate is quite powerless in the matter as a body. It may be that the other house will eventually consent to a conference, but in the meantime men are leaving the service in droves. They are the very best men we have. It is a most unfortunate situation and a very serious one.

The solemn warning of the New York Senator is not an overstatement. The situation is unfortunate and serious, both for the Army and for the country.

No influence could be more demoralizing than the uncertainty which has for over a year clouded the future of the Army and its constituent parts. From above has come nothing but demotions, the loss of the rank and pay which temporarily kept the wolf from the door. From below has been the ever-increasing pressure of rising prices so that the army officers have been confronted with the alternative of contracting debts with no prospect of payment, or of a reduction in the scale of living accompanied by deprivations for their families beyond the point of endurance. With this pressure from above and below it is not surprising that hundreds of officers have been literally squeezed out of the service and that hundreds more are making arrangements to leave, or at least are considering the advisability of such a step.

Fortunately for the individuals there seems to be no lack of employment for them at remunerative figures from 50 to 200 per cent, or more, above their army pay; but this fact merely increases the gravity of the situation as far as the Army and the country are concerned. Once the ties which have bound them to the service are severed, the plunge into civil life is taken, and new connections are made, the men whose training has cost the country so much and whose services would have been so valuable, is gone, never to return, unless, perhaps, in case of war.

That there is a direct relation between the cost of living and the exodus of officers was shown by Mr. Wadsworth. Since June, 1919, the prices of staples sold at the army com-

missary in Washington have increased on an average of 40.72 per cent. The pay bill was introduced in September, 1919, since which time the increase in the price of staples has been 23 per cent. Meanwhile the flood of resignations continues. Since the armistice 2,361 resignations were received, of which 565 were presented after the pay bill was introduced. As a result the Army is like a sieve, shot full of holes here and there which cannot be filled within or from without under present conditions; and every day more holes are being made in the riddled structure.

Strange as it may seem to those responsible for this alarming condition, it is the country more than the Army that is suffering, for the Army exists for the country. Its disintegration threatens the security of the country at a time when only the blind can fail to see the dangers confronting it. And if the day of reckoning comes it will be the country which will have to pay as it did in the late war. Did Chicago or San Francisco after their great fires dismiss half their fire-fighters, reduce the pay of the others and sell the fire-engines and other apparatus?

It is fortunate in this crisis that some members of the House recognize this peril of depending for protection upon battleships tied to the docks, and an army bewildered by uncertainty and harassed almost beyond endurance by problems of self-preservation.

Representative Crago, both as a member of the House Committee on Military Affairs and on the floor of the House, has let no opportunity pass to present to his colleagues the evil results of their continued indifference to the pay bill. During the debate on the army reorganization bill he pointed out that it was proposed to increase the pay of the Army and Navy, not to make the service attractive to outsiders but in the hope of retaining those already in.

Another friend of the united service who has been most active in behalf of the bill is Representative Stiness. From the first Mr. Stiness has stood staunchly by his guns and never admitted the possibility of defeat.

Representative Kahn, chairman of the Military Affairs Committee of the House, has been too engaged with the reorganization bill to lead the fight for the pay bill. But he has been in hearty sympathy with the efforts of Representatives Crago and Stiness and other supporters of the bill, and with the reorganization bill out of the way will be able to actively champion the pay measure.

There is no question that if the matter is permitted to come before the House the bill will be sent to conference and a satisfactory conclusion will be reached. More than a majority of the House believe in preserving the Army and Navy. They reflect the views of their constituents, for there is no doubt that the country wants an army, well trained and contented whatever its size. Consequently it is only a question of time before the influence which has so far prevented consideration of the joint pay bill in the House will yield to pressure from the inside and outside and allow it to pass; the pity is that during the delay additional hundreds of officers, discouraged by the outlook, and unable to make both ends meet, will leave the

Army in disgust. Senator Wadsworth said he thought the steady demotion of officers "will undoubtedly increase the number of resignations." Just so!

Universal Military Training

The Universal Military Training provision of the Army Reorganization Bill is having some rough sledding in Congress. The measure is receiving favorable comment and consideration in the Senate and has the support of Mr. Kahn, Chairman of the House Military Affairs Committee.

The situation reached a climax in the middle of the month when the members of the Democratic side, under the leadership of Mr. Clark called a caucus to consider the subject.

The President learned of the situation and addressed a letter to the Secretary of War. This letter was laid before the party caucus on Monday night. In his letter President Wilson set forth his views in no uncertain terms. He stated:

> I am told that a caucus of the Democratic members of the House of Representatives has been called to consider pending military legislation, and the suggestion has been made that a resolution be adopted committing the Democratic membership of the House against the policy of general military training. In the present circumstances, it would seem to me unfortunate to make a party issue upon this subject, particularly since within a few months the party will assemble in convention and declare the principles upon which it deems it wise to commit itself in a national election. The present disturbed state of the world does not permit such sureness with regard to America's obligations as to allow us lightly to decide upon this great question upon purely military grounds while the demonstrated advantages to the use of the country which came from military service in the war plainly suggest that in the national interest, quite apart from military considerations, the moderate and carefully conducted course of military training may have the highest possible advantage.
>
> In our discussion of the subject, you will recall I gave my approval in principle to the various very moderate training projects suggested by the general staff and I would be very glad to have you convey to appropriate members of the House, who will attend the caucus, my strong feeling against action by the caucus which will tend to interpose an arbitrary party determination to the consideration which this subject should receive from the best thought of the members of the House, considering alike the national emergencies which may confront us and the great disciplinary and other advantages which such a system plainly promises for the young men of the country.

Notwithstanding these expressed views of the President, the Democrats went on with their caucus and after four hours' debate adopted the following resolution by a vote of 106 to 17:

> It is the sense of this caucus that no measure should be passed by this Congress providing for universal compulsory military service or training.

With this action it looks as though the proposition has been indefinitely sidetracked. In addition to the hostility

of the Democratic side of the House, there is a sufficient number of Republicans opposed to the idea to doom it to defeat should it come up on the floor. All of this has been done notwithstanding the fact that the universal training feature of the proposed legislation has the approval and hearty support of the American Legion with its four million voters, the National Guard and the various training camp and veteran associations.

It would be a good thing for the nation to have the question made a national issue and settled at the polls—settled for all time to come. Either we are to have a military policy or we are not to have one. Any safe and sane military policy must include some form of Universal Military Training, for it is by this means alone that we will be able to provide a military force of any consequence. If the people decide by their vote that we are not to have a military policy, that we are not to make the necessary preparations for national defense—then the responsibility is theirs. We say, let's place that responsibility where it belongs. The time has passed when the Army and those who are charged with its conduct and guidance should longer shoulder the responsibility.

For many years the best thought of the Army has been devoted to framing a military policy for the nation. The Wadsworth Bill, now before the Senate, embodies the features that we have advocated for all of these years. The bill was gotten before the Senate last month and this is the fate it meets in the lower house of Congress. It is doomed to defeat. Another year is wasted in providing for the national defense. The unsettled conditions produced make it most difficult for the Army to get on with its training. Organizations are mere skeletons. Men will not enlist. They are waiting to see what is going to be done about the Army. All in all it is a most unsatisfactory condition of affairs.

Remarking editorially on this situation the *Washington Post* states:

> The opposition to universal military training comes principally from the agricultural sections of the middle west. It is based upon two objections, one the fear of militarism and the other a protest against sending the young men to the training camps during the summer months when their services are needed on the farms.
>
> The first objection is born wholly of the imagination. Senator Gore describes military training as "the egg of militarism" and says it should be smashed. On the contrary, it is the egg of an effective national defense, and should be conserved and protected so that it would be ready in any emergency to produce promptly an efficient army ready to spring at once to the protection of America. Human experience teaches that the more efficient and ready it is, the less likely it will be needed. Militarism in America is a bugaboo, which should be exposed after the experiences of the past three years, and not now invoked to frighten the people away from a sane policy of preparedness.
>
> There is, of course, a practical problem involved in the mobilization of 600,000 young men in the training camps each summer, and especially does this appeal to the farmers who find it so difficult to secure adequate farm labor. The young men are being lured from the farms to the cities by attractive

wages, short hours and the pleasures of urban life, until the question of labor now has become the most serious one with which the agricultural interests have to contend. If thousands of country boys are obliged each summer, during the busiest period of harvesting, to go to the training camps, it cannot but add to the already great shortage of farm labor.

But this is a narrow view at best. The necessity of training the youth of the land in the rudiments of military tactics is of such broad and deep importance, involving, as it does, the highest interests of the nation, that no objection weighs against it. The sacrifice involved would be so small as compared to the advantage gained as to be inconsiderable. The national safety is the highest interest of the country, for upon that rests our liberty, our government and our institutions.

The action of the democratic caucus in disregarding the advice of President Wilson and making opposition to military training a party issue is significant, showing, as it does, a determination on the part of the rank and file to hearken to what they think is the call of the voters, rather than to the orders of the captain. Perhaps, after the campaign is over and the smoke of battle has cleared, Congress may develop enough courage and statesmanship to approach this great issue unafraid.

President Wilson spoke with the foresight and courage of a statesman on this issue. He had no political ax to grind by speaking out, but expressed a willingness to let the political aspect of the matter be passed upon by the party in national convention. The truth is that it is not a partisan question, as Democrats and Republicans both favor and oppose military training according to their individual notion.

If all the nations of the earth were as devoted to peace as is the United States, then the training of youths in military matters would be unnecessary. The danger is not the development of militarism in the United States—that is pure nonsense—but in the militarism of other nations. What does America gain by remaining untrained and unarmed when certain other nations are training and arming? America's pacifist example means nothing to them, except to spur them to greater endeavors to make ready, so that they may strike if fate decrees, in circumstances most favorable to them and most unfavorable to America.

Ask the boys who fought in France whether it is better to be prepared or to go up untrained against an enemy. Ask any former soldier whether he was injured or improved by his military training. As for setting up a "military oligarchy" in this country, consisting of ruthless military officers of the Prussian pattern—well, let an American officer strike a civilian with his saber, thrust him from the sidewalk, or attempt any other Prussianism! It is hard to imagine an American officer doing such a thing, but it is easy to imagine the things that would be done to him.

Salvation Army's Second Drive

The Salvation Army, one of the most beloved and efficient organizations in the world, will the first few days in May have its second drive for funds with which to conduct its work throughout the country. It will be remembered that a year ago the Salvation Army inaugurated a new policy relative to securing money for its work. In days gone by, in fact ever since the organization was, the tambourine and little collection box in the hands of men and

women were the sole means of collecting money for work performed by the army.

Early last year it was decided to relegate the tambourine and collection box, as far as daily collections were concerned, to the scrap heap and appeal more directly to the people at large for funds for home service. The main reason for the departure from the old order of things was that officers and members of the organization knew that the time devoted to the raising of dimes, nickels and pennies by hours of work spelled a loss of efficiency. It had been proven time and again that the hours and hours devoted to the raising of a few dollars could be spent to a far greater advantage in other lines of work.

The success of the campaign in May, 1919, and the work of the organization since were ample proof that the change was for the better. A year ago the Salvation Army promised the people that they would not make another appeal for funds for another year. That promise has been kept. But beginnting May 1 and continuing for five days the army again will ask the American people to maintain their religious and charitable work.

It is not necessary for the INFANTRY JOURNAL to tell its readers that the 1920 drive of the Salvation Army is a most worthy one and deserving of every consideration. The work of the Salvation Army at home and overseas is too well known to demand repetition here. Every hour of every day members of the army are doing good in some direction. Every cent, every dollar given in the next drive will be well expended. Waste and extravagance are unknown in the army. Economy and efficiency are the watchwords of the organization.

Recollections of what the Salvationists did for the men in service overseas and at home are too vivid to have to be recalled at this time. The work of the Salvation Army during those days created a lasting gratitude, not alone among the soldiers, sailors, and marines, but among the people at large as well—a people who will always welcome the opportunity to give aid to an organization that stands ready to do good at all times and in all places.

The JOURNAL urges its readers in every branch of the service to give every possible assistance to the Salvationists while they are carrying on their next drive. Not only give, and give liberally, yourself, but make it a sacred duty to see that your friends bend every effort to make the drive a success.

¶

The H. C. L.

The Scientific American has come forth with a most apt illustration of the cause and effect of the predicament that the country finds itself in today. The editorial goes on to say:

> Is the high cost of living (in part) the result of high wages, or are high wages the result of the high cost of living? Which is cause, and which effect? Is the inflation of currency the result of high prices, or is it the other way about? A man saves today, in order that he may enjoy the benefit tomorrow. Is tomorrow's benefit, then, the cause of today's action?
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> Sometimes a homely illustration points a truth more aptly than a long disquisition. There is the old picture of the driver of a donkey cart dangling a tuft of thistles before the nose of the proverbially

recalcitrant animal. The donkey moves forward because he wants to catch up with the tantalizing morsel, and the thistle persistently evades his grasp because the donkey keeps moving. Is the motion of the thistle the cause of the donkey's willing progress, or vice versa?

The simple fact, of course, is that the motion of the bait is both cause and effect of the donkey's motion. It is not always easy or even possible clearly to distinguish between these two links in a chain of events. We may think of the motion of the donkey as divided up into small instalments. When he first catches sight of the thistle, he moves forward a little. He strains on the harness, and in a moment his motion is transmitted to the cart and thus to the thistle. So far the motion of the donkey is cause, the motion of the thistle effect. But the next instant conditions are reversed, the donkey feels impelled to move forward in order to follow the elusive thistle. And so the thing goes on, an alternation of mutual cause and effect. When we speak of the motion of the thistle we sum up in one term a series of steps which are alternately effect and cause of the motion of the donkey. The motion as a whole is thus both cause and effect, strange as this may seem at first.

So much for our illustration, trivial, perhaps, but offered without apology. For it points a practical lesson. The cost of living goes up a little, then wages go up to catch up with it. Then the process starts over again, and goes on in a vicious circle. It is like a cat chasing its tail. How long will this continue? Where will it lead? Let some wise man tell us, if he can. We offer no suggestion. We will only add the remark that the relation between the expansion of our credit instruments and the present high prices is probably of the same kind.

We will not attempt to answer the question, nor can we supply a remedy. But in passing we may state that the army officer, with his salary of 1908, finds himself the "innocent bystander" of these conditions. *C'est la guerre.*

The "Military Engineer"

The Military Engineer, which is the successor of *Professional Memoirs,* is the new journal of the society of American Military Engineers. It has just made its bow to the service and the engineering profession.

As announced in the foreword in this initial number:

> The scope and purpose of this journal are far broader than those of *Professional Memoirs,* which it succeeds. It appeals to a wider circle, it has a greater and more important mission to accomplish. It will deal with all technical and personal matters bearing upon the relation of the engineering profession to the national defense. This journal is the medium by which you may keep yourself informed as to technical developments bearing upon national defense, and in touch with your fellow patriots of the profession who have their country's welfare closest to their hearts.
>
> This journal is the official medium for the exchange of ideas, for cooperation and sympathetic understanding, for greater solidarity and patriotic efficiency, for all engineers in the United States Army, including the National Guard and the Engineer Officers' Reserve Corps, and for the great body of professional engineers in civil life who believe in adequate national defense and will lend their support to promote it.

There are more than a hundred pages "brim-full" of most interesting material that will appeal to the profession, and the excellent illustrations add greatly to the dress of the magazine.

The Military Engineer has but to maintain the pace that it has set for itself in the first number and the unbounded success of the publication is assured.

THE INFANTRY JOURNAL congratulates the editor on his excellent production and extends to *The Military Engineer* the right hand of fellowship with our very best wishes for the future.

Φ

Helping the Passage of the Pay Bill

As his contribution in the interest of the passage of the Army Pay Bill Col. H. D. Styer, U. S. Army, Retired, has forwarded the following telegram to the Honorable Thomas S. Crago, of the House of Representatives:

TELEGRAM

Detroit, Michigan.
Feb. 21, 1920.

Honorable T. S. Crago,
House of Representatives,
Washington, D. C.

After thirty-nine years service and from recent experience in recruiting work I am confident that it will be impossible to obtain even the foundation of a small efficient new peace-time army unless Congress provides the reasonable increase in pay which all civilians have demanded and are receiving. Our most promising young officers are leaving daily. No railroad would operate successfully with passenger conductors who are paid wages of brakemen. My pay as a colonel now buys less than my captain's pay did twenty years ago. We appreciate your earnest work. I hope your associates do not ignore the growing effect of delay on the morale of those officers who have served too long in the army to begin anew in civil life.

Styer, Colonel.

As a citizen of the United States an officer of the Army has a right to communicate with his friends in the legislative branch of the Government.

Everything possible should be done in a dignified manner to bring the "pay needs" of the service before the members of Congress.

During the war the allied governments realized that there was a relation —and a definite one—between pay and morale. They granted generous increases to their service men who were holding the Hun. They refused to defraud their nation's defenders.

Writing on this vital subject, Col. George Harvey, in his weekly of March 6, states:

> Our own men were too busy at their posts to consider money matters while the fighting was on, and their wives were too loyal to bother them with the tiresome detail of shoddy shoes, worn-out clothes, half-empty refrigerators, soaring rents and overdrawn bank accounts. Many of the women went to the homes of their parents or of friends; others moved from homes to boarding-houses; others took positions to help make both ends meet. The wives and children of our regular fighters were the poorest people in the land. They bore it quietly and in patience. They were sure that a grateful people would make amends so soon as pressing national demands had been met.

These national demands have been met. The grateful people are ready to make amends. Right-minded men all agree that the pay of the Army is not sufficient to meet the increased cost of living, and that it should be raised. It's up to every man to do his share. Mr. Mondell has stated in effect that it is *unethical* for the members of the service to present facts to Congress relative to the pay conditions in the service. We say let's be *unethical* for a time and see how it works. Hewing to the straight and narrow paths of ethics has gotten us nowhere in the past.

A Correction

In the February number of the JOURNAL we published an announcement of the resumption of publication of the 3d Division Newspaper *The Watch on the Rhine*. In this we erroneously stated that "The paper will be published twice each month." We wish to correct this statement. This valuable publication is published on Saturday of each week and is enjoying an era of great prosperity. It is receiving the whole-souled support of not only the present but the War members of the Division, and is doing excellent work.

Fuspatrich in "St. Louis Post-Dispatch."

VILLA: MAYBE I OUGHT TO BE INTERVIEWED.

Reserve Officer's Department

The Course in Minor Tactics

DO NOT get the idea that this course in Minor Tactics is kindergarten stuff, for it is not. All the organization, administration and training of an army is to the end that the infantry platoon may be gotten to the field of battle and fought effectively. To do this latter it must be led properly, and it is you who are to do the leading.

These small problems deal with the details of troop leading where you have to come down to bed-rock and determine just what you would do under the conditions stated. There is no "passing the buck" to Lieutenant A and Sergeant B, for you, yourself, are these personages.

A field officer joined a battalion to which he had been assigned. In his enthusiasm he at once organized a school for his officers in Minor Tactics with a series of problems involving the operations of small infantry units. An old friend and classmate called him aside and confidentially informed him that all of his officers were "fed up" on this.

That they could do Griepenkerl forward and back. They had had much Gizycki and had waded through Von Moltke to the bitter end. "All right," replied the major, "I haven't had any of this stuff. They will have to come back and help me catch up." He gave out his first simple problem covering the operations of a small unit and insisted on every man going into all the details of troop leading. They worked a week on the problem, boning hard every night. They wrote pages of solutions and finally ended up by acknowledging that perhaps they did not know so much Minor Tactics after all. They knew how to write an "estimate of the situation" and argue for their solution. They could write an order for a brigade or division, "passing the buck" to the brigade and regimental commanders, but when it came down to being Second Lieutenant A or Sergeant B commanding the second platoon, they had to go back and bone up the fundamentals—get down to bed-rock and basic principles.

Now this is what you will have to do to reap the full benefit of this course of training.

In his introduction to "Tactical Decisions," Buddecke states:

The tactician needs a thorough knowledge of the fundamental principles to build on as well as the faculty of rightly applying them. Through uncultivated genius alone, which pays no attention to form, he will never become equal to the difficult problems of a serious crisis. Still less will the mere theorist be able to fill the position if his powers be limited to the knowledge of formal tactics.

That power of decision and action which is able to cope with all the situations of war is gained only by developing the ability to form a judgment in technical matters with certainty.

Therefore tactics is an art to be learned. Like every other art, it demands a measure of talent, and the highest stage of perfection can be reached only by those highly gifted at the start. In spite of this, however, the less gifted can, through practice, gain a considerable degree of facility, and many a tactician has only begun to find out his powers as he advanced in the knowledge of his profession. Here also, one may say, "industry is genius."

It should therefore be the aim of every officer to progress through the individual study of tactics and thus prepare himself for the highest duties of his calling.

As an introduction to his tactical problems Gizycki says:

He who seeks to become a leader of troops should therefore develop the following qualifications:

1. The ability to reach a clear and intelligent decision.
2. The ability to communicate this decision clearly and unmistakably to others.
3. The necessary knowledge to enable him to lead the troops so as to carry out his intentions.

By constant practice in the solving of particular problems bring out the infinite variety of possible situations; by means of these bring out the nature of war and thus, by inciting the student to formulate a large number of definite decisions and orders, seek to develop the abovementioned qualifications.

The actual procedure to be pursued in the solving of a tactical map problem is such a matter of personal equation that any word of assistance is difficult to give. You must decide for yourself how best to go about the task in accordance with your own habits and manner of performance. But, while fitting your routine to your own equation you can, nevertheless, learn something from what others have found to be advisable.

At the service schools the time allotted for the solution of a tactical problem is four hours. This means four hours of downright hard, concentrated and systematic work. No periods of just sitting in a brown study, waiting and hoping that a stroke of genius will arrive

with the proper answer. The only way to get that stroke is to dig for it, systematically.

In the first place you must find out what the problem is all about. You must have a thorough realization not only of the bald outline furnished by the statement of the problem, but of all the attendant circumstances that can only be guessed at. Your imagination must be stimulated to the point where you can realize the many hopes and fears that tug at the commander, who has to make, under actual service conditions, the decisions that you are called upon to make. You must become thoroughly imbued with the realities of the imaginary situation if you are to arrive at a satisfactory solution. All of this takes time and concentration.

The statement of the problem should first be read over carefully, perhaps underlining in red those parts that refer to Reds, and in blue those referring to the Blues; and the places mentioned should be staked out on the map or maps. Then the problem must be read again and again until certain that all points have been correctly located and that you have worked yourself completely into the atmosphere of the drama. It would seem unnecessary to caution so carefully that you must know what your task is before you start to perform it. But it is a fact that students constantly solve, in whole or in part, some other than the problem laid down.

Quoting again from Buddecke:

After we have gained a correct insight into the details of the problem, we get to the main task, which is to think ourselves completely into the spirit of the problem and to arrive at an estimate and decision for our future course.

By repeatedly and quietly reading the problem, paying due regard to the map in front of us, we gain, just as in focusing a telescope, a clearer and clearer conception of the situation. The more we succeed in placing ourselves mentally in the given situation and in recognizing all the details in their relation to the general problem; the more we succeed in thinking ourselves into the soul of the leader, in conceiving the magnitude of his task, and in sharing his responsibility, the more eager we shall become to take over his duties and play an active part in the operations.

The longer we "brood" over the map, the clearer will be our conception of the measures which the situation demands. And in this it is important to hold and consider carefully; that is, to follow out, to their furthest effects, all the thoughts and ideas which come to us, often passing like lightning through our brains and suggesting various lines of action. Often it is precisely these fleeting thoughts which lead us to the right path. But ideas which are not fully thought out and thoroughly weighed cannot have a decisive influence on our judgment and decision. A head which has a hundred thoughts, but which can neither hold fast nor think out a single one, will always remain undecided and irresolute in tactics.

For those of limited experience in the solution of tactical problems, Von Litzmann, formerly director of the German War Academy, has set forth the following basic principles:

1. One must strive to exert a stronger will power than his opponent, *i. e.*, must never allow himself to give up his own purpose or mission by reason of information received regarding the enemy, unless it becomes clearly evident that the premises on which his intention or mission was founded have become valueless. Furthermore, one should, as a matter of principle, try to thwart the intentions of the opponent as soon as they become apparent.

2. On the other hand, one must never stick stubbornly to the execution of every detail of previously made plans when difficulties become apparent; it is enough to accomplish the main purpose.

3. One must always assume that the enemy will adopt the course of action most disadvantageous to ourselves, and take measures accordingly.

4. If it becomes evident that the enemy, either on account of faulty orders or unfavorable circumstances, has been placed at a disadvantage, we must naturally seek at once the best means of turning this to our own advantage, and no time must be left the enemy to improve his situation.

5. If our own situation impels us to employ forces in two different directions, we must bear in mind that a separation into two equal parts is nearly always a mistake.

As strong forces as possible should be used in the main undertaking, the fewest numbers possible for minor purposes.

6. We must never take half measures, but in all cases arrive at a full and definite decision and express it definitely. An indefinite manner of expression, with a loophole for escape in case of unfavorable outcome, is inadmissible.

Whenever it is possible to solve the problem by attacking, this course should be followed, nor should we allow ourselves to be deterred by superior hostile forces or by the uncertainty of the situation. By taking every advantage of the terrain and by concentrating our forces at a decisive point, even weaker forces may gain a decision. In threatening situations, an attack is often the only means to safety; such an attack crosses the intentions of the enemy, prevents him from closing in the net about us undisturbed, and gains for our side the advantage of morale.

7. If the situation has actually changed we must endeavor to ascertain what kind of a new decision will best serve the advantage of the whole. This is always the main point, not the individual successes of the subordinate organ-

izations. In fact, these latter must sometimes be sacrificed when demanded by the welfare of the larger organization.

Having in mind all that has been said before with regard to the systematic arrangement of the task, the following procedure is recommended as the one that will produce the greatest results.

1. Study the problem with the map until it is thoroughly understood.

2. Make a mental estimate of the situation along the following lines:

(*a*) Determine briefly what your mission is.
(*b*) Consider the enemy.
  (1) Strength.
  (2) Position.
  (3) Possible and probable moves that he will make.
  (4) Probable intentions.
(*c*) Consider your own forces.
  (1) Strength.
  (2) Position relative to that of the enemy.
  (3) Supporting troops.
(*d*) Influence of the terrain.
(*e*) Plans of action open to circumvent the enemy.
(*f*) Arrive at a definite and clean-cut decision as to what you are going to do and how you are going to do it.

Based on this decision you compose your order in accordance with the forms laid down in the Field Service Regulations. You will find, in the solution of problems in Minor Tactics, if you will stick to the five-paragraph order form in the Composition of Orders and messages that you will have little opportunity for going wrong.

This five-paragraph order lines up as follows:

1. Information of the enemy and our supporting troops.

2. Plan of the commander.

3. Orders for the several elements of the command, usually starting with the element closest to the enemy and working back through the other elements in the order of their proximity to the enemy.

4. Administrative arrangements.

5. Place of the commander or where messages are to be sent.

Now here are a few don'ts for the benefit of the solver of map problems. They may help you out.

1. Don't waste time criticising the problem. No problem is absolutely perfect. Take it as you find it and base your solution on it as it stands.

2. Don't consider your enemy inactive. Don't go ahead and solve the problem upon the assumption that the enemy is still there, when if the hostile forces have continued to march, as a matter of fact, they may be many miles from the place where reported and so close at hand as to render impossible all of the measures determined upon. Careful consideration of the elements of time and space, not only for your own troops, but for the enemy's as well, is a necessity in almost all problems. When you figure where your plan may take your troops up to a certain time, be sure that you also figure where the enemy's troops, if advancing in the direction to cause you the most trouble, will be at that same time.

3. Don't spoil your solution by simply careless mistakes in calculations of road spaces and distances. If you, as an advance guard commander, are ordered to precede the main body by a half a mile, do not figure your time of starting so that your order will make a gap of 3 miles.

4. Don't make your order disagree with your decision. The finest tactical decision is of little value unless it is embodied in a clear, distinct order that will convey to each subordinate a very definite idea of the part he is to play.

5. Don't look too far in advance. If your enemy is a number of miles away and your decision is to march to attack him, simply issue a march order, not, as is frequently done, a combination of march and attack order. By the time your forces have marched to the enemy's vicinity, you are likely to find a radically different situation from the one expected, and in fact find yourself confronted by an entirely new problem which requires its own solution. In the map room solve simply the problem that the instructor presents to you. Do not build, on top of the one he gives you, another one for some time much further into the future, and then proceed to solve that too.

(NOTE: Much of the material for these notes is taken from "Some Notes on the Solution of Tactical Problems," by Brig. Gen. Harold B. Fiske, late G-5 of the A. E. F. and one of the foremost authorities on the subject of Infantry Tactics in the world.)

Minor Tactics

Problem No. 3—An Outpost

Maps: Guide Map and Emmitsburg Sheet[1]

SOLUTION

Special Situation No. 1.

I will join my platoon and conduct it to a point on the 488-542 road about 200 yards east of 488. Here I will halt the platoon and caution the men: "Give me your attention."

I will then issue my tentative orders for the establishment of support No. 2, as follows:

"The enemy is concentrating at FREDERICK, and is pushing his troops out towards border points. His patrols are reported at MOTTERS and FOUR POINTS. Our advance party (first platoon) is on the EMMITSBURG road with the point just east of ROSE HILL FARM. Our regiment (less 2d and 3d battalions) bivouacs tonight on the TANEYTOWN road south of HARNEY. The 3d Battalion bivouacs on the HAGERSTOWN road south of FAIRFIELD. Our battalion bivouacs just north of those farmhouses (*points towards farmhouses*). Our company forms the outpost along the high ground north of ROSE HILL FARM–ROAD FORK 488–ROAD FORK 542. The 2d platoon will be posted as support No. 1 in the vicinity of ROAD FORK 488 and cover the front from the spur north of ROSE HILL FARM (inclusive) to a point midway between the EMMITSBURG road and the woods to the east (inclusive). The fourth platoon (less one section) establishes a detached post in the south edge of the woods on that spur (*pointing*) 950 yards northwest of ROAD FORK 488 to cover the approaches from the west and southwest. The remainder of the company forms the reserve which will be posted in the vicinity of the road fork 400 yards west of HILL 589. March conditions cease."

"This platoon will form support No. 2, which, posted at ROAD FORK 542, will cover the front from the west edge of the woods south of HILL 567 (inclusive) to the road running east from 542 (inclusive)."

"Sergeant A, with the first section (less one squad), will cover the posting of the outguards and upon completion of that duty will be withdrawn to the support. The section will form the advance party for the march of the platoon as far as ROAD FORK 542."

"Corporal D, with the fourth squad, will form outguard No. 1, which, posted at the west edge of the woods south of HILL 567, will cover the front from the west edge of the woods (inclusive) to the east edge of the woods (inclusive). Communication with the left outguard of support No. 1 will be maintained."

"Corporal E, with the fifth squad, will form outguard No. 2, which, posted on the 542–485 road about 300 yards south of 542, will cover the front from the east edge of the woods south of HILL 567 (exclusive) to a point 200 yards east of the 542–485 road (inclusive)."

"Corporal F, with the sixth squad, will form outguard No. 3, which, posted on the road running east from 542, will cover the front and approaches from the east."

"The remainder of the platoon will be posted at 542, as the support."

"In case of attack the line of supports will be held."

"The company rolling kitchen will remain at the post of the reserve, where meals will be cooked and distributed to the supports. Outguards will send to the support for meals."

"Messages to support."

After issuing this order I will direct:

"Sergeant A, take charge of your section and carry out your orders."

"Corporal D, get your squad out of the column and post outguard No. 1 as soon as the front is properly covered by men from the first section."

As soon as the advance party moves out on the 488–542 road, I will follow with the rest of the platoon.

Special Situation No. 2.

SOLUTION

I will take charge of the first section and give orders as follows:

"You have heard what the lieutenant

[1] Copies of the Emmitsburg Sheet of the Gettysburg Map, on which this problem is based may be obtained from the U. S. Infantry Association at 10 cents each.

has said about the enemy and our own troops."

"This section (less third squad) will cover the posting of the outguards."

"Corporal M, with the front rank of the first squad, will cover the posting of outguard No. 1 at the west edge of those woods (*pointing*) south of HILL 567. Go as far south as the 410–485 road."

"The rear rank of the first squad, as point, and the second squad will form an advance party for the platoon marching on 488–542 road as far as road fork 542, at which point Corporal N (section guide), with the rear rank second squad, will continue east as far as TOMS CREEK and cover the posting of outguard No. 3 at the east edge of the woods east of 542. Corporal P, with the front rank of the second squad, will proceed southeast on the 542–485 road as far as 485 and cover the posting of outguard No. 2 on the 542–485 road."

"The rear rank of the second squad will accompany me."

"Corporal Q will report the third squad to the platoon commander."

"Covering detachments will remain out until they receive orders to withdraw, when they will proceed to the post of the support at 542."

"I will be on the 542–485 road about 200 yards north of 485."

On the completion of this order I will direct:

"Corporal M, get the front rank of the first squad out of the section and proceed with your mission."

"Corporal N, take charge of the rear rank first squad and move out as the point."

"Corporal Q, report your squad to the platoon commander at once."

As soon as the point has gained a distance of 150 yards I will follow with the second squad as advance party.

Special Situation, No. 3.

SOLUTION

I will take charge of my squad and get it out of the column.

As soon as Corporal M moves out with the front rank of the first squad and gains a distance of about 150 yards, I will command: FOLLOW ME.

I will move up the road about 100 yards and then go across country to the northwest corner of the woods. I will then move south along the west edge of the woods for a distance of 350 yards to a point just north of the small spur jotting out towards the west. Here I will halt my squad and direct:

"Fall out. Take off your rolls and pile them here (indicating the place). Put your bayonets on your belts. Then assemble here."

This accomplished, I will caution the men: "Give Me Your Attention," and issue the following verbal orders:

"You have heard what the lieutenant has said about the enemy and our own troops. The front rank of the first squad is out in our front to cover the posting of this outguard. They will go along the edge of these woods as far south as the road."

"This squad forms outguard No. 1 of Support No. 2."

"Jones and White (riflemen), first relief; Smith and Wilson (riflemen), second relief; Harris and Walch (riflemen), third relief; Rainer (automatic rifleman), spare man."

"Rainer, you go over there (*pointing*) and find out where the left outguard of Support No. 1 is posted and tell them where we are. When you return, select an automatic rifle position in this vicinity."

"The men of the second and third relief will remain here. Prepare the bivouac for the outguard inside the woods and select tentative firing positions to cover the open ground to the south and southwest."

"Messages and signals to me here."

I will then direct: "*First relief*, FOLLOW ME."

I will conduct Jones and White about 50 yards south along the edge of the woods to the top of the spur. Here I will post Jones as No. 1 of the first relief and give him his orders as follows:

"You have all the information of the enemy and our own troops."

"You are sentinel post No. 1 of outguard No. 1 of Support No. 2. The left outguard of Support No. 1 will be posted in the vicinity of those farmhouses (*pointing*). Rainer will give you the exact location when he comes back. No. 2 of this post will be posted on the east side of these woods. That road leads

in the direction of EMMITSBURG. That town is EMMITSBURG. That road leads from EMMITSBURG to CUMPS MILL. That is the ROSE HILL FARM. If you see the enemy, signal to me at the outguard."

I will then proceed northwest through the woods to the east edge where the 540 contour joins the woods. Here I will post White as No. 2 of the first relief and give him his orders as follows:

"You have all the information of the enemy and our own troops. You know where No. 1 is posted. Outguard No. 2 will be posted on that road (*pointing*). The exact location will be given to you later."

"That road is the 410–485–CUMPS MILL road. That is CUMPS MILL. That creek is TOMS CREEK. That is the direction of FOUR POINTS."

"If you see the enemy, signal to me at the outguard."

I will then return to the position of the outguard, verify the arrangements that the men have made for bivouacing and inspect the preparations for defense.

Special Situation, No. 4.

SOLUTION

1. The following is the body of the report that I will send to the outpost commander.

"Third platoon (less second section) posted at Support No. 2 at ROAD FORK 542."

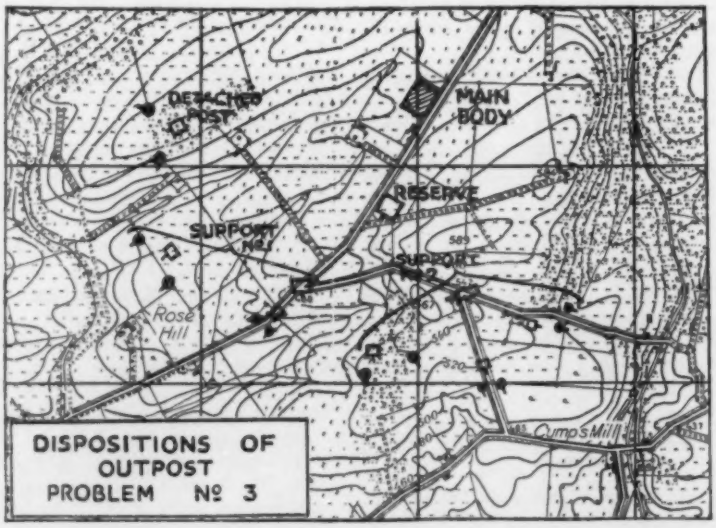
"Outguard No. 1, fourth squad, posted in west edge of woods south of HILL 567, 400 yards south of 488–542 road. Sentinel post No. 1 on spur 100 yards south of outguard. Sentinel post No. 2 at east edge of woods at point where 540 contour enters woods. Patrols through woods to south."

"Outguard No. 2, fifth squad, posted on the 542–485 road, 300 yards south of 542. One double sentinel post 100 yards to south of outguard. Patrols to 410–485 road."

"Outguard No. 3, sixth squad, posted on road running east from 542 near farmhouses 300 yards east of 542. One double sentinel post on road at east edge of woods 140 yards to the east of outguard. Patrols to TOMS CREEK."

"Messages to support at ROAD FORK 542."

2. See Sketch No. 1.



SKETCH NO. 1.

Special Situation, No. 5.

I will assemble the noncommissioned officers and issue the following verbal orders:

"There is no further information of the enemy. Our Support No. 2 is posted with outguard No. 1 in the west edge of the woods south of HILL 567, 350 yards south of 488–542 road; outguard No. 2 on the 542–485 road, 300 yards southeast of 542; outguard No. 3 on the 488–542–TOMS CREEK road 300 yards east of 542."

"Visiting patrols are detailed as follows:

"No. 1. Corporal Smith, with the front rank, third squad, to go out at 7 o'clock p. m. and 1 o'clock a. m.

"No. 2. Acting Corporal S, with the rear rank, third squad, to go out at 9 o'clock p. m. and 3 o'clock a. m.

"No. 3. Corporal T, with the front rank, second squad, to go out at 11 o'clock p. m. and 5 o'clock a. m."

"Sergeant K (platoon sergeant) will conduct visiting patrol leaders over the visiting patrol route, leaving here at 5 p. m., visiting first outguard No. 1, proceeding thence to outguard No. 2, thence to outguard No. 3, and return to the support."

Special Situation, No. 6.

SOLUTION

I will join my platoon and give the following order:

"The platoon (less the second section) has been detailed to establish a detached post on that hill (*pointing*), 950 yards northwest of ROAD FORK 488."

"Sergeant K (section leader, second section), take charge of your section and report it to the captain."

I will then march the platoon to the road fork 150 yards northeast of road fork 488 and proceed towards the northwest on the unimproved road leading to the farmhouse. As soon as the platoon clears the main road I will halt it and give the following order.

"Corporal F, move out along this road with your squad as a point."

"I will follow with the rest of the platoon at a distance of 150 yards."

When the platoon arrives at the woods I will march it along the edge of them to the southern part of the woods, where I will halt it and give detailed orders for establishing the detached post.

Corporal F with his point will have moved out to the northwest and southwest edges of the woods, where they remain in observation.

I will direct the men:

"Take off your packs and stack them in squad piles and then assemble here."

I will then issue orders as follows:

"The enemy is concentrating at FREDERICK and is pushing his troops out toward border points. His patrols are reported at MOTTERS and FOUR POINTS. Our advance party (first platoon) is on the EMMITSBURG road with the point just east of ROSE HILL FARM. Our regiment (less second and third battalions) bivouac tonight on the TANEYTOWN road south of HARNEY. The third battalion bivouacs on the HAGERSTOWN road south of FAIRFIELD. Our battalion bivouacs just north of the farmhouses northwest of HILL 589. Our company forms the outpost along the high ground north of ROSE HILL FARM–ROAD FORK 488–ROAD FORK 542. The second platoon will be posted at Support No. 1 in the vicinity of ROAD FORK 488 and cover the front from the spur north of ROSE HILL FARM (inclusive) to a point midway between the EMMITSBURG road and the woods to the east. March conditions have ceased."

"This platoon will establish a detached post on this ridge."

"Corporal Carter, with the front rank, second squad, will establish a cossack post in the south corner of the woods."

"Corporal Dodds, with the front rank, third squad, will establish a cossack post in the west corner of the woods."

"The remainder of the platoon will be posted here as support."

"Runners Anderson and Bailey will establish a visual signal station at the east edge of the woods and maintain communication with the outpost reserve in the vicinity of the crossroads 500 yards northeast of 488."

"Corporal Laskey (section leader), get everything ready to construct trenches at points that I will indicate later."

"Messages to support."

I will then have the platoon sergeant go

with me to the west edge of the woods, where I will select the points where trenches are to be dug and the woods prepared for defense. We will then work along the south edge of the woods, and I will here indicate where the trenches are to be located. These will consist of rifle pits and firing positions for the automatic rifles. I will have the platoon sergeant get the men of the support and superintend the digging of the trenches.

I will inspect and adjust the position of the two cossack posts and their sentinels and then return to the position of the support where I will write out my report, the body of which is as follows:

"No further information of the enemy. No contact with him. Fourth platoon (less second section) has established detached post in woods on spur 950 yards northwest of ROAD FORK 488. One Cossack post in west corner of woods. One cossack post in south corner of woods. Main body in south center of woods. Signal post established in southeast edge of woods west of farmhouse. Am preparing woods for defense. Will send patrols to west and southwest."

"Messages to support."

I will prepare a sketch showing my dispositions and send it with my report by runner to the support commander.

PROBLEM NO. 4

A Platoon in Attack

Map: Emmitsburg Sheet[1]

General Situation:

Blues and Reds are at war, in April.

The northern border of the Emmitsburg Sheet is the boundary between countries. Blues south—Reds north.

A Red army in Blue territory is slowly withdrawing toward the north before a severe attack from the Blues. At dark last night the Blue assaulting line, in close contact with the Reds, was halted on a line from east to west, points 437–Thomas Creek Church–Martins Mill–Longs, all inclusive. Fighting during the day was severe.

Special Situation No. 1:

The 1st Blue Infantry, 1st Blue Division, relieved the 2d Blue Infantry, same division, in the line last night. The 1st Infantry has battalions echeloned in depth as follows: 1st Battalion, assault battalion; 2d Battalion, reserve; 3d Battalion, reserve. Company B, 1st Battalion, is the left assault company of the battalion. The 1st platoon, Lieutenant B commanding, is the right assault platoon of Company B. Platoon line, Thomas Creek Church, inclusive, extending west for 150 yards. The 2d platoon, left assault platoon, prolonging line of 1st assault platoon to the west for 150 yeards. The 3d and 4th platoons, support, 250 yards south of 1st and 2d platoons. Four cossack posts, two each from the assault platoons, are stationed 200 yards north of the line held by the platoons.

At 4.00 a. m., Captain A, commanding Company B, assembles his platoon leaders, First Sergeant, runners and buglers and issues the following verbal orders:

"Outgoing troops reported strong resistance in this vicinity late yesterday afternoon. The enemy is holding the woods to the front of our cossack posts, and apparently the higher ground to our front. The principal enemy fire yesterday was rifle in the woods, machine gun from the high ground, and intermittent periods of intense shell fire from 77-mm. guns."

"Company A, base company for the battalion, prolongs our line to the right 300 yards. The 3d Battalion, 3d Infantry, prolongs our line to the left. Companies C and D are battalion reserve companies and are 600 yards south of our position."

"Our forces resume the attack at 6.00 a. m. today. We advance at my arm signal, 'Forward.'"

"There is no change in the assignment of platoons or sectors. The assault platoons will advance: First sections, line of skirmishers, preceded by a line of scouts; second sections, line of squad columns.

[1] Copies of the Emmitsburg Sheet of the Gettysburg Map, on which this problem is based, may be obtained from the U. S. Infantry Association at 10 cents each.

Support platoons deploy in line of squad columns in two waves and follow the first echelon at 300 yards. Support platoon will furnish contact group of four men to right and left of first waves of the assault platoons."

"Direction of advance, 7° Magnetic azimuth. Objective, north edge of woods 2,000 yards south of Fairplay."

"There will be no barrage."

"I will follow the assaulting platoon."

"Are there any questions?"

"Rejoin your platoons."

(NOTE.—During the night and at the present time enemy artillery is harassing the roads. Flares are being sent up by the enemy on a line running east and west through 466 and 467. The night is dark, clouds heavy, temperature 50° F. Condition and morale of troops *excellent*. The first platoon has 1 officer, 3 sergeants, 8 corporals and 45 privates. Two privates are absent, sick. You are Lieutenant B, commanding first platoon, Company B.)

Required:

(*a*) Your estimate of the situation.

(*b*) Your orders.

Special Situation No. 2:

The advance has proceeded without interruption to a point about 300 yards south of 467, at which point rifle fire is opened on your scouts. Your scouts take cover and begin firing. From the volume of fire you estimate the enemy strength to be about 15 men. You, personally, are on the unimproved road about 350 yards south of 467. A scout on the road about 75 yards north of you is firing tracer ammunition in the direction of the road fork 100 yards southwest of 467. You hear heavy bursts of fire to your right front. An enemy machine gun begins sweeping the unimproved road. The scout on the road firing tracer ammunition ceases fire and remains motionless; he is apparently dead. The first wave of your platoon is following you at about 100 yards.

Required:

Your plans and orders.

Special Situation No. 3:

Your first wave is about 100 yards south of 449 and engaged with the enemy. Enemy fire is coming from crest at 443, woods north of 449 and woods northeast of 449. Your second wave is about 150 yards south of the first wave. You are in a shell hole in the woods on the right of the road about 30 yards south of your first wave. Your platoon has been in this position for about ten minutes.

The two runners you have had watching troops on your flanks report to you that the platoon on your left is about 600 yards south of knoll at 443 and stopped by enemy fire coming from small woods 150 yards south of knoll 443; that troops on your right are about 400 yards to your right rear and are heavily engaged with the enemy to their front.

Your platoon has suffered ten casualties, seven being from the first wave.

You have been advancing one hour and fifty minutes.

Required:

Your plans and orders.

Special Situation No. 4:

During operations covered by Situation No. 3, one squad, second section, joined and is with the first section. The remainder of the second section deployed, facing northwest, about 200 yards south of your first section, and opened fire on small woods 150 yards south of 443.

Your first section has not advanced since previous situation. The section has been in this position twenty-five minutes and has suffered eight more casualties, one being the section leader. Fire has ceased from the front and left front. Bursts of long-range machine-gun fire are coming from northeast of 449. Enemy artillery is shelling crossroads 449 and woods in your immediate front with high explosive and gas. A few gas shells are falling about 200 yards south of your position.

Friendly artillery is firing on positions to the north of the 422–421 road.

The second section suffered three casualties under last situation and is now in position ready to follow the first section. Total casualties for platoon have been: First section, 15; second section, 6.

Troops on your left are on line with your first section and advancing slowly. A few of the men of the platoon on your left are firing in the direction of road fork 200 yards southwest of knoll 443.

Troops on your right are advancing about 200 yards south of the road running east and west through 449.

Required:

Your plans and orders.

The Drillmaster

(Continued)

Facings

Paragraphs 55–56

Q. Explain how to face to the flank.

A. The command is **1. Right (Left), 2. FACE.**

Raise slightly the left heel and the right toe; face to the right, turning on the right heel, assisted by a slight pressure on the ball of the left foot; place the left foot by the side of the right foot. Left face is executed on the left heel in a corresponding manner.

Q. Explain how to execute a half face to the flank.

A. The command is **1. Right (Left) half, 2. FACE.** Executed similarly, facing 45 degrees to the right or left.

Q. How is the face in marching executed?

A. Turn on the ball of either foot and step off in the new direction with the other foot.

Q. How is the face in marching executed without advancing?

A. Turn on the ball of either foot and mark time.

Q. How is the face to the rear executed?

A. The command is **1. About, 2. FACE.** Carry the right toe about a half foot-length to the rear and slightly to the left of the left heel without changing the position of the left foot; face to the rear, turning to right on the left heel and right toe; place the right heel by the side of the left.

Drill Hints For the first instruction in the facings, be sure to pick out smooth, hard ground. On soft ground, heels will soon begin to dig in and the recruits will begin to put their whole bodies into the facings.

In all of the facings, and especially the about face, watch for the swaying of bodies and swinging of arms.

Watch out for a tendency on the part of the recruits to look down at their feet. To counteract such a tendency, instruct them to conclude the face with a slight raising of the chin.

Be particularly careful in the instruction in **the face in marching.** It is very generally neglected with the result that men bungle **the march by the flanks** and the turn of the pivot man in the turn on the fixed pivot.

What is actually done in the face marching is to whirl toward the new direction on the ball of the foot that hits the ground at the command **march,** stepping off with the other foot. In the turn to the right on the fixed pivot, at the command **march,** No. 1 whirls on the ball of the right foot, raising the left and planting it at the same time. To teach this to recruits, tell them to raise the left foot and plant it in front of the right toe, turning to the right on the right foot at the same time, then continue to mark time.

To turn to the left on the fixed pivot, at the command **march,** No. 4 begins to mark time with the left foot, turning to the left at the same time on the ball of the right foot.

Drill Talk The next movements we will take up are what we call the facings, that is, movements in which you turn or, as we say in the army, face to the right or left or entirely around.

Now, there is a difference between turning to the right or left, as you would ordinarily do, and facing to the right or left as the soldier does. In the first case, you would probably take a short step or two and move off the ground you now occupy. The soldier faces in such a way that he stays in practically the same spot.

Facing is a simple movement of the feet in which one heel always remains in place. In executing the right face, you turn squarely to the right; in the left face, you turn squarely to the left, and in the about face, you turn completely around.

Now in facing to the right you turn on the right heel, which remains in place. At the same time, you press down with the left toe and push yourself around with it. You will find after a time that you unconsciously put most of your weight on your right heel, leaving your toe free to move.

Now try it. Remember you turn squarely to the right on your right heel, pushing yourself a little with your left toe. After you have faced, bring your heels together with a click.

In facing to the left, the movements of the feet are just the opposite. You turn squarely to the left on the left heel and use your right toe to push with. Now try that, and don't forget to bring your heels together with a click.

Do it all with your feet. Don't sway your bodies or swing your arms.

The command is **1. Right, 2. FACE.** At the command **right,** transfer the weight of the body to the right heel, but make no movement of the body. At the command **face,** press

down with your left toe and turn squarely to the right, then bring your heels together with a click. (Illustrate.)

We will now try right face.

The about face is a little harder to do. In this, you turn completely around to the right on the left heel, using the right toe to help you in turning. In order to do this, you carry the right toe back behind the left heel, dig it in so to speak, and pull yourself around with it—then bring the heels together with a click. Now, carrying the right toe back to just the right place is something you will have to get by practice. It should go back of the left heel a little, and a little to the left of it, like this. (Illustrate.)

Now try carrying the right toe back to the proper place. Look down and see where to put it. Keep on trying it until you get it right.

Now try putting it back there and facing to the rear. Be careful to keep your balance while facing.

The command for this movement is **1. About, 2. FACE.** At the command **about,** transfer the weight of the body to the left heel but don't move the body in doing so. At the command **face,** carry the right toe back and turn on the left heel, all in one movement.

We will now try the movement by command.

Salute with the Hand

Paragraph 57 *Q. Describe the salute with the hand.*

A. The command is **1. Hand, 2. SALUTE.** At the command **salute,** raise the right hand smartly until the tip of the forefinger touches the lower part of the head-dress or forehead above the right eye, thumb and fingers extended and joined, palm to the left, forearm inclined at about 45 degrees, hand and wrist straight; at the same time look toward the person saluted. (**Two**) Drops the arm smartly by the side.

Drill Hints There are several common errors in saluting. They are: Not straightening out the fingers; turning the palm of the hand toward the face; bending the wrist; ducking the head down toward the hand; not looking at the person saluted; looking out of the corner of the eye; looking under the hand; raising the elbow too high; and, finally, jerking the hand down by the side after saluting.

The principal thing to remember is to keep the forearm, wrist, and fingers in a straight line, thumb lying along the inside of the forefinger.

The next thing is to keep the head up, bringing the forefinger up to the hat or cap brim. Don't bother about the elbow. Keep the forearm, wrist and fingers straight, from the elbow to the tip of the fingers, then raise the fingers to the hat brim and the elbow will take care of itself.

The next thing is to keep the head up, the chin a little higher, if anything, than usual. Then turn the head enough to look the person saluted squarely in the eye.

In dropping the hand by the side, avoid letting it fall limply. Do it smartly, but not with a jerk.

First teach the recruits how to do the salute in two counts. Then teach them to do it, holding the hand in the position of salute until you have returned it.

After this, give them practice in saluting while walking. Have them walk past you in single file, at six or eight paces distance, and salute you as they pass. Watch for the straight line from elbow to finger tip, the chin up and the head turned to look you squarely in the eye.

Drill Talk Before learning how to salute, you must know something about the reason for saluting in the army.

Some people will tell you that it is an unnecessary custom, that it serves no good purpose, and that it is degrading to make one soldier salute another. These people are all wrong, and they are wrong because they do not understand what they are talking about. If there were nothing back of this salute, they would be right, but I am going to show you that there is a lot more to saluting than just touching the cap with the finger.

In the first place, it is a very old and honorable custom. It comes down from the days when the knights were the principal military men. They were fighting men and they were always prepared to fight at a moment's notice. Whenever two of them met, if they felt peaceably inclined, each raised his right hand—his fighting hand—to show that it was empty. In other words, it was a sort of peace sign among fighting men.

As time went on, it came to be a kind of greeting among military men. Whether they knew each other or not, they raised the right hand in salute, and it came to be an understanding among military men that they should always acknowledge each other's presence by saluting.

So it has come to be the adopted form of greeting among military men the world over.

It is, so to speak, the high-sign of the military profession.

What purpose does it serve? For one thing, it serves to distinguish military men from civilians. Nobody else has the right to use the military salute. For another thing, it serves to tell the kind of a soldier a man is. If he is a slovenly, indifferent soldier, he will be careless about saluting, just as a slovenly, indifferent man is careless about the way he bows to a lady. If he is a smart soldier, he will take pride in the way he salutes. He is proud of himself, proud of his profession, and he tries to show it in the way he salutes.

You will hear it said that saluting is a sign of discipline. It is, because if a soldier is well trained, if he knows his business and is proud of himself, he will be smart and soldierly in the way he salutes. In other words, it is one of his little ways of showing off.

One more thing. You remember that the custom of saluting came down from the Knights of Chivalry. Remember one other thing—these men were all equals; one was just as good as the other. They saluted each other as equals in a great calling. And soldiers today do the same thing. Whatever their rank, officers, noncommissioned officers and privates are all soldiers. They are soldiers first, officers and noncommissioned officers next and, as soldiers, they are all of equal rights in the military service.

That gives you a clue to the spirit in which you ought to salute. Remember that you are a soldier saluting another soldier. If you salute more smartly than he does, it means that you are smarter, more military, a better soldier than he is. Don't be backward about showing him the kind of a soldier you are. Hold your chin up, look him squarely in the eye and salute just as smartly as you know how.

The command is **1. Hand, 2. SALUTE.** At the command **salute,** raise the right forearm, keeping the forearm, wrist and fingers straight, from the elbow to the fingertips, like this (illustrate). Keep the fingers close together like this (illustrate), with the thumb lying along the inside of the forefinger, like this (illustrate), then touch the brim of your hat just above the right eye, like this (illustrate), keeping the palm of the hand to the left. At the same time, look squarely toward the person saluted.

Now, in saluting, keep your chin up. Don't duck it down to meet your hand. Keep it up. And in looking at the person saluted, don't peek out of the corner of your eye. Turn your head enough to look squarely at him.

At the command **two,** drop your hand smartly by your side. Don't let it fall down—drop it smartly, but don't jerk it down.

We will now try it.

Now that you know how to salute properly, I am going to tell you in a few words when to salute and under what circumstance to salute. Briefly, salute all officers. Salute them in passing or when they speak to you or before you speak to one of them. As to the distance at which you would salute, if you would bow or speak to a friend under the same circumstances, salute. When in doubt, salute. It does no harm. You will be taught a lot more about this saluting when we come to instruction in Military Courtesy, but what I have told you should be enough until you get that instruction.

Steps and Marchings

Paragraphs 58-61

Q. From a halt, how do all steps and marchings begin?

A. Except for the right step, they begin with the left foot.

Q. What is the length of the full step in quick time?

A. Thirty inches from heel to heel.

Q. What is the cadence of the step in quick time?

A. One hundred and twenty steps to the minute.

Q. What is the length of the full step in double time?

A. Thirty-six inches from heel to heel.

Q. What is the cadence of the step in double time?

A. One hundred and eighty steps to the minute.

Q. When necessary, how is the cadence of the step indicated?

A. The instructor calls **one, two, three, four,** or **left, right,** the instant the left and right foot respectively should be planted.

Q. How should the command for the execution of all marching movements be given?

A. It should be given as one or the other foot strikes the ground.

Q. At what instant does the movement begin?

A. Except as otherwise specifically prescribed, the movement begins when the following foot is planted.

Q. In what cadence are all steps and marching and movements in marching executed?

A. Except when the squad is marching in double time, or the command **double time** is added to the command, the movement is executed in **quick time.**

Q. When double time is desired, where is the command for double time added?

A. It is added to the preparatory command. Example: **1. Squad right, double time, 2. MARCH.**

Quick Time

Paragraph 62

Q. Describe how to march forward in quick time from the halt.

A. The command is **1. Forward, 2. MARCH.**

At the command **forward,** shift the weight of the body to the right leg, left knee straight.

At the command **march,** move the left foot straight forward 30 inches from the right, sole near the ground, and plant it without shock; next, in like manner, advance the right foot and plant it as above; continue the march. The arms swing naturally.

Drill Hints

For the first instruction in marchings, be sure to pick out smooth, hard ground. In this instruction, the tendency of new men is to look down at their feet. If the ground is not smooth, they are sure to stumble sooner or later and this will attract their attention to their feet.

If the ground is hard, they will hear their footfalls, and this is a great help in learning the proper cadence. It helps them to get into the swing of marching.

In this connection, do not get into the habit of indicating the cadence too much. Some instructors do it all the time. At first, keep your men on a hard road or other hard ground, indicate the step occasionally, and then require them to keep the cadence themselves. Don't make a drum corps of yourself.

Watch to see that your men do not move their bodies at the command **forward.** They are apt to do so in shifting the weight of the body to the right foot. Also, they are apt to get into the habit of standing with the weight of the body back on the heels, and of leaning forward slightly at the command **forward.** Watch for this tendency to sway forward and, if you find them doing it, go back and correct their position at attention.

Drill Talk

We are about to take up the subject of steps and marchings, and before doing so, I am going to tell you something about the military way of marching.

In the first place, there is a lot of difference between marching and plain walking. In walking, people choose their own gait, that is, they walk fast or slow, take long steps or short steps, as they wish. In marching it is different. All of the men of a squad or platoon or company must move at the same gait. This means that all of the men in the squad or platoon must take exactly the same length of step and take the same number of steps per minute. In other words, in marching you can't hurry or loiter. You must move just as the rest of the squad or platoon does. For this reason we prescribe a uniform length of step and a certain number of steps per minute. The length of the step in quick time, that is, in ordinary marching, is 30 inches, and we take one hundred and twenty of them to the minute, that is, two steps each second.

There is another difference between walking and marching. In walking, you swing along as you please, swinging the shoulders, hands in pockets, looking about as you choose. Now, if you stop to think, you will realize that this involves a lot of extra movement on the part of the body.

In marching, the soldier uses his legs alone to get over ground. He keeps his body still, swinging only his arms a little in order to reserve his balance. He moves his feet straight to the front, keeping his legs almost straight, with the soul of the foot close to the ground (illustrate), and plants his feet easily, without shock or stiffness. These are the things that make the soldier's stride look so smooth and easy.

The command for marching in quick time is **1. Forward, 2. MARCH.** The soldier always steps off with the left foot, so, at the command **forward,** shift the weight of your body to the right foot, but don't move your body in doing it. At the command **march,** carry the left foot straight to the front 30 inches, keeping the sole close to the ground, and plant it easily, then move the right foot forward in front of the left in the same fashion. Don't try to make hard work of it, just walk easily, and let your arms swing naturally; forget about them.

In order to get you accustomed to the proper length of step, I am going to march abreast of you. Forget about the length of step and the cadence and take your step and cadence from me.

We will now try it.

Paragraphs 63–64

Q. Being at a halt, or marching in quick time, how is double time *executed?*

A. The command is **1. Double time, 2. MARCH.**

If at a halt, at the first command, shift the weight of the body to the right leg. At the command **march,** raise the forearms, fingers closed, to a horizontal position along the waist line; take up an easy run with the step and cadence of double time.

Q. If marching in quick time, how is the movement executed?

A. At the command **march,** given as either foot strikes the ground, take one more step in quick time, then step off in double time.

Q. How is quick time resumed from double time?

A. The command is **1. Quick time, 2. MARCH.**

At the command **march,** given as either foot strikes the ground, advance and plant the other foot in double time; resume the quick time, dropping the hands by the side.

Drill Hints

The remarks with reference to picking out smooth hard, ground for the first instruction in marching apply especially in connection with instruction in double time.

Watch out for "crow-hopping," lifting the knees higher than necessary and making a series of jumps out of the double time. It is not necessary to raise the feet much from the ground or to bend the knees but slightly in double time. It is nothing more than an easy run.

Watch especially for the arm-swing. Recruits will hold their arms close to their sides without swinging. If they do that, they will begin to swing the shoulders instead. Insist on an easy swing of the forearms along the waist line.

Drill Talk

We are about to take up the subject of marching in double time, in other words, the military run. In this, the length of the step is 36 inches and the cadence is one hundred and eighty steps to the minute, that is, three steps each second.

The only difference between double timing and ordinary running is that you take the same length of step all the time and keep the same gait—just a slow, easy run.

You have probably noticed that very few people run with their arms hanging by their sides. They generally bend them at the elbow and swing them across the body about the height of the waist. You have also probably noticed that the faster a man runs, the higher up his forearms come and the faster they swing. As a matter of fact, a man swings his arms exactly in cadence with his gait. This is a simple provision by which he keeps his balance, as I will explain later on.

In double timing, the soldier raises his arms, closing his fists easily to the height of the waist-line and then swings them easily across his body. He moves his feet and legs very much as he does in quick time. He bends his knees very little and keeps his feet close to the ground. All of this saves extra movement and shock, and extra movement and shock mean extra work and extra fatigue.

Now a word about changing from quick to double time and the reverse. In marching in either quick or double time, each time that you carry a foot forward you lose your balance, and you only recover it for the instant that your foot is planted, because at that same instant you raise the other foot and thus lose your balance again. However, since this goes on regularly, you are able to control your movements and to keep from falling. But you can't change suddenly from one gait to another without losing your balance. You must have time to get hold of yourself, so to speak. For this reason, when changing from one gait to another, you do not change at the command **march.** You take one more step, then change.

For example: If marching in double time and the command is given for quick time, at the command **march,** take one more step in double time, during which you get hold of yourself, then step off in quick time. In the same way, if marching in quick time and the command is given for double time, at the command **march,** take one more step in quick time, during which you gather yourself, then step off in double time.

Similarly, if marching in either quick or double time, and the command **halt** is given, at the command **halt,** take one more step, then halt.

We will now try marching in double time. Remember that at the first command you shift the weight to the right foot, but don't ean forward. At the command **march,** bring up the forearms, fists slightly closed, to the height of the belt, and take up an easy run. Regulate your step and gait on me.

To Mark Time

Paragraph 65

Q. While marching, how may the advance be arrested?

A. By the command **1. Mark time, 2. MARCH.**

Q. How is the movement executed?

A. At the command **march,** given as either foot strikes the ground, advance and plant the other foot; bring up the foot in rear and continue the cadence by alternately raising each foot about 2 inches and planting it on line with the other.

Drill Hints The commonest errors are: raising the feet too high, stamping them, and running up the cadence. You can overcome most of this by indicating the proper cadence.

Drill Talk It sometimes happens while marching that we want to stop the advance without halting, that is, we want to keep up the cadence of marching without gaining ground. We do this by what is called marking time.

To mark time, we merely raise the feet about 2 inches off the ground and lower them again in place instead of carrying them forward.

If marching in quick time, we follow the same rule as in changing from quick to double time and the reverse, that is, at the command **march,** we take another step, then begin the mark time. If the command is given while at a halt, we simply start off as in marching, with the difference that we raise the left foot and lower it in place instead of advancing it.

The command is **1. Mark time, 2. MARCH.** We will now try it first from the halt.

The Half Step

Paragraphs 66–67

Q. To shorten the step in quick time, what is the command?

A. The command is **1. Half step, 2. MARCH.**

Q. How is the movement executed?

A. At the command **march,** take steps of 15 inches in quick time, or 18 inches in double time.

Q. May forward, half step, halt, and mark time be executed one from the other?

A. Yes; in either quick or double time.

Q. How is the full step resumed from mark time?

A. By the command **1. Forward, 2. MARCH.**

Side Step

Paragraph 68

Q. How is the side step executed?

A. Being at a halt, or at mark time, the command **is 1. Right (Left) step, 2. MARCH.**

At the command **march,** carry and plant the right foot 15 inches to the right; bring the left foot beside it and continue the movement in the cadence of quick time.

Q. Under what circumstances is the side step used?

A. It is used for covering short distances only, and only in quick time.

Q. When executing the side step under arms, how is the piece carried?

A. It is carried at the **trail,** without command.

Drill Hints In the side step, as in mark time, there is generally a tendency on the part of recruits to run up the cadence. There is also a tendency to sway the body from side to side in cadence with the step. Both of these tendencies should be corrected.

Drill Talk It also sometimes happens that we want to move the squad or platoon to the right or left, the front or rear, without changing the formation —as though we were to slide it to the front, the rear, the right or the left, keeping the formation just as it stands.

For this purpose, we make use of short steps of 15 inches, half the step in quick time.

To move a short distance to the front, the command is **1. Half Step, 2. MARCH.** At the command **march,** step off as in quick time, except that you take steps of 15 inches.

Standing in ranks as you are, and without changing your formation, there is only one way in which you can move to the right or left. That way is to move one foot sidewise, then bring the other up beside it and so on—side-stepping, so to speak. That is exactly what you do at the command for right or left step. You carry the right foot to the right, or the left foot to the left, according to the command, bring the other foot up, click the heels together, then repeat, keeping the cadence of quick time. Don't bend your knees —keep the legs straight.

Problems in Map Reading

SCALES

Q. A sketcher takes paces of 32.2 inches. Construct a working scale of paces at 6 inches to one mile.

Q. A sketcher is making a road map at a scale of 3 inches to 1 mile. He is measuring his distances by count-

ing the revolutions of a 40-inch wheel. Construct a working scale. Construct a reading scale for this sketch to read yards.

Q. You have a French map that has a scale of meters on it. You lay off 2 inches on the scale and find that it reads 1,016 meters. Construct a reading scale of yards for the map.

Q. You have been ordered out to make a road sketch mounted. You have tested your horse and find that he travels at the rate of 5¼ miles per hour. The scale of your sketch is to be 3 inches to 1 mile. Construct a working scale to read minutes and half minutes.

Q. You take a pace of 33.4 inches. You have a map on which the legend and scale have been torn off. You pace the distance between two points on the ground and find it to be 1,500 paces. You measure this corresponding distance on the map and find it to be 2¾ inches. Construct a reading scale of yards for the map.

Q. Your platoon is at the bridge over the Monocacy near the Stull farm. It is now 9 a. m. You are ordered to march via the 383–420–365–405–468–453–Emmitsburg–Fairplay road to Fairplay. At what hour will you pass 468; and 488? Where will you make your regular hourly halts?

Q. Your company (less one platoon) is at Fairplay. The detached platoon at road fork 444. You are ordered to be at the railroad station at Emmitsburg at 10.38 a. m. At what hour will each element of the company have to start its march.

CONVENTIONAL SIGNS

Q. You are standing at road fork 453 north of Longs. Draw a line from your position to Cumps Mill and another to the Orendorf farmhouse. Describe the country included in the area bounded by these two lines as shown by the conventional signs.

Q. Draw the following named conventional signs without consulting the map.

a. An improved road bounded on one side by a barb wire fence and on the other by a smooth wire fence.

b. An unimproved road bounded on one side by a worm fence and on the other by a stone fence.

c. An improved road having an embankment on one side and a fill on the other.

d. A stream over 15 feet wide with steep banks.

e. A stream with an improved road crossing it on a stone culvert.

f. A double track railroad running through a cut.

g. A woods with underbrush with an unimproved road running through it.

h. A space 2 inches square with each of the following vegetation: corn, cultivated land, orchard, marsh land, cleared woods.

i. Outline a drainage system and draw in the contours to show hills, cols, spurs, steep slope and gradual slope.

VISIBILITY

Q. You are standing at road fork 481 at Longs. Your eye is 5 feet 6 inches above the ground. The trees on hill 463 are 20 feet high. What would be the height of a flag pole at road fork 418 to be visible to you?

Q. You are at road fork 445 at Motters. Can you see St. Joseph's College?

Q. You are at road fork 445 at Motters. Your eye is 5 feet 6 inches above the ground. How high would Martin's Mill (building) have to be to be visible to you?

Q. You are at Thomas Creek Church. Can you see Emmitsburg? Can you see Cump's Mill? Can you see Motters? Can you see the bridge over the Monocacy River near the Stull farm?

MISCELLANEOUS

Q. You have been ordered to make a sketch of the country bounded by lines running as follows: 437–402 thence to 449, thence to Thomas Creek Church, thence back to the initial point 437.

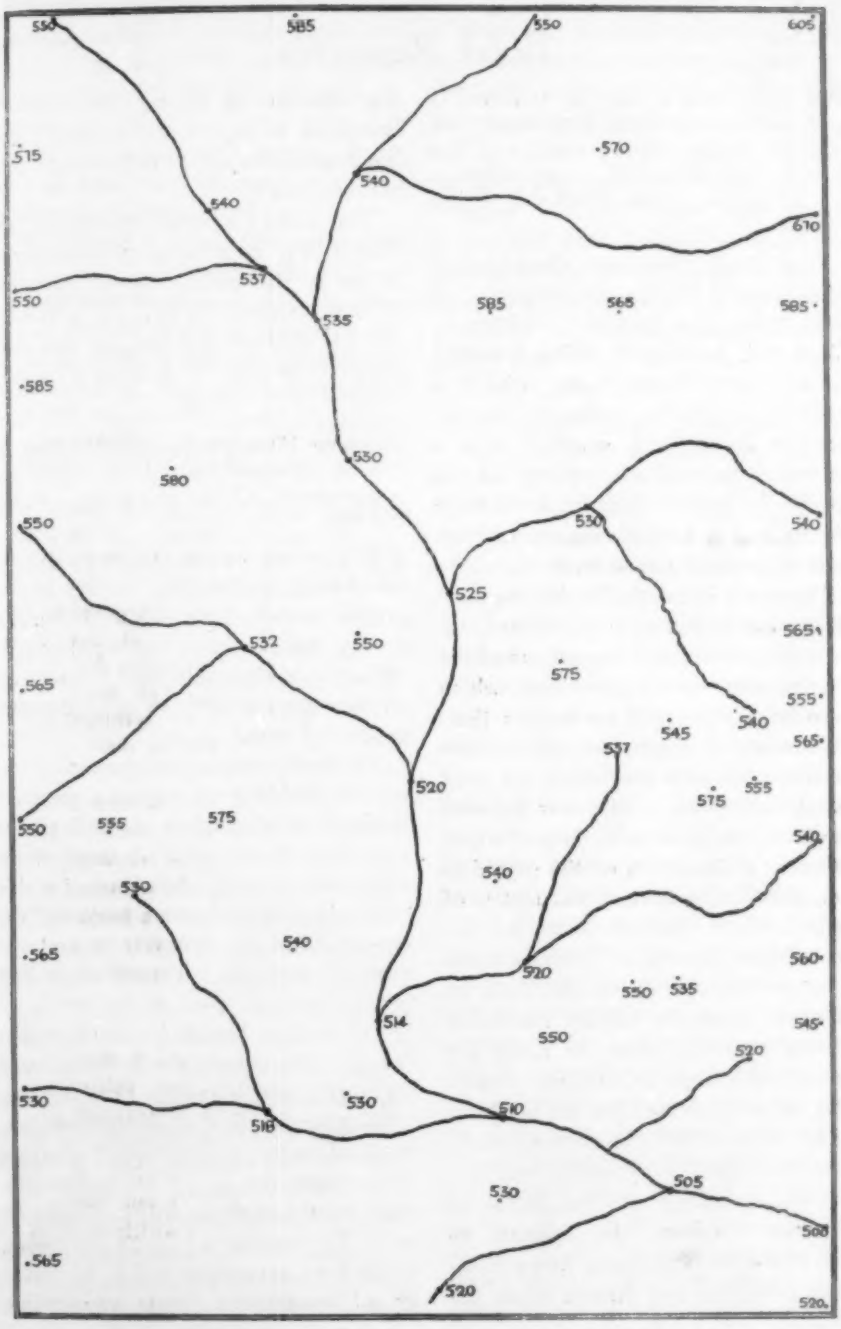
a. Where would you locate your base line?

b. What points would you use for intersection stations and what points would you locate by intersection?

Q. Your company is at the Orendorf Farm on the Emmitsburg Turnpike. You are ordered to march to Fairplay as escort for a wagon train heavily loaded with ammunition. The decision as to the road that you would take is left to you. What road would you take?

Q. You are at Motters. What is the direction of the following points: Cumps Mills; Four Points; Carricks Knob; the mouth of Toms Creek?

Q. Draw in the contours on the skeleton map on page 919.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Book Reviews

The Long Arm of Lee, by Jennings C. Wise, late Lieutenant Colonel, National Army. Lynchburg, Va.: The J. P. Bell Co., 1915. Two volumes, 6 x 9 inches, bound in red silk. Price, $4.50.

This book has been characterized "An Epochal Work—the greatest Civil War Book of a Decade." Written by Lieut. Col. Jennings C. Wise, formerly of the United States Army, who is a military writer of authority and especially on artillery matters, it is a critical history of the artillery of the Army of Northern Virginia, as its name implies, and is a most valuable addition to the literature of the Civil War.

The work is unique in that no such history has been writen heretofore. In its writing the author has exhausted the original war records, many of which have been untouched up to this time. His sources of information also include the testimony of a number of the most notable survivors of the war between the states. In addition to the text which embraces a discussion of the organization, material, personnel and tactics of Lee's artillery, and a sketch of the Confederate Bureau of Ordnance and its interesting operations, the work includes a collection of 24 handsome military portraits, many of which are therein published for the first time—some specially created for the book.

This brilliant and illuminating work, while specially devoted to the artillery, is in fact a history of the Army of Northern Virginia. In addition to much new historical matter many interesting sidelights are thrown upon the war between the states. The author's treatment is expert and masterly, and his conclusions are as unbiased as they are convincing.

The author served throughout the World War as a battalion commander in one of the leading combat divisions of the National Army. As a reward for his valuable services he was promoted to the grade of lieutenant colonel.

Airplane Photography, by Herbert E. Ives. Philadelphia: J. B. Lippincott Company. Cloth, 413 pages. Price, $4.00.

The author was in charge of the experimental department of the photographic branch of the Army Air Service during the war and had much to do with the remarkable development of airplane photography to meet the exigencies of war.

The book is a practical manual of the subject designed to acquaint the professional photographer as well as the amateur with the most advanced methods of the science. As a basis for this the author has extensively treated the fundamentals of photography and the scientific methods of study, tests and specifications.

The author has had a wide experience. He covers the subject very thoroughly and is most enthusiastic regarding the practical peace-time employment of aerial photography. In his final chapter he points out specifically some of the uses to which it may be put: The making of bird's-eye views, which have heretofore had to be drawn by an imaginative artist; advertising,

especially adapted to real estate and architect businesses; the study of landscape gardening; construction work, as preliminary surveys and to show the state of progress; news events; scientific explorations; mapping; and surveying of various classes.

The book is divided under seven general heads: Introductory; the airplane camera; the suspension and installation of airplane cameras; sensitized materials and chemicals; methods of developing plates, films and papers; practical problems and data and the future of aerial photography.

Ⓓ

The Last Four Months: How the War Was Won. By Maj. Gen. Sir F. Maurice. Boston: Little, Brown & Co., 1919. Cloth, 245 pages. Price, $2.50.

In effect, this book is an impartial tribute of homage to the combined instrumentalities that, finally, secured the defeat of the German army. In detail, it is a description of the important movements that, upon the western front, summed Foch's great campaign against the enemy. Within these movements stands the real Armageddon of the war —Haig breaking the Hindenburg line, Gouraud fighting in Champagne, the Americans at the Meuse-Argonne, King Albert operating in Belgium. From this high point the story moves quickly through the fruitless efforts of Ludendorff to make a fair retreat, and through the last push that includes the concerted action of British, French and American armies upon the retreating Germans. Maps accompany this exposition of the various movements. The outlook here is that of a soldier in command, that of tice of war. It is, as a matter of course, one in touch with the theory and practa clean-cut discussion, moving with business precision through the field under consideration. Beyond this field of the western front the author does not assume to go, though, at the last, he does project a thoughtful and informing outlook upon other battle fronts and does, besides, estimate the general effects of the armistice at the moment of its acceptance as against the effects of further action against a defeated foe.

Ⓓ

Radio Engineering Principles. By Henri Lauer and Harry L. Brown. New York: McGraw Hill Book Co., 1920. Cloth, 8vo. Price, $3.50.

This appears to be one of the best of the many books on radio which have been published in this country since the close of the war. The authors have attempted to cover the subject simply and clearly without any extended use of mathematics. Almost all of the recent radio developments are described, some of them probably for the first time in a text-book. Nearly half of the book is devoted to the subject of three electrode vacuum tubes and this portion is particularly well handled.

As is to be expected in a rapidly changing subject like radio, there are some statements which will not meet with general approval; for instance, the authors appear to have been too credulous in accepting the statement that ground wires are more sensitive than the usual type of antenna in the reception of distant signals, and Weagant's quite impossible theory of vertical static. It is to be regretted that under the subject of high frequency machines the Telefunken alternator is omitted, as it has probably been more extensively used than either of those

described. A rather amusing mistake occurs on page 141 where a radio frequency heterodyne current is represented in a figure as being introduced into an audio frequency telephone. In spite of these and some other faults, the book will undoubtedly be of wide usefulness among radio students.

The Four Horsemen of the Apocalypse, by Vicente Belasco Ibanez. New York: E. P. Dutton and Company, 1919. Cloth, 482 pages.

In all the great mass of war literature Spain's premier master of fiction, in his "Four Horsemen of the Apocalypse," has produced the outstanding and distinguished novel of the day.

The opening scenes of the wonderful story are laid in the boundless pampas of Argentina. Then follows the journey to France, the life of Paris in the early days of the great war. The author's description of the Hun invasion of France and the first battle of the Marne will forever remain one of the classics unsurpassed in the literature of the times.

It is a great novel—a deeply moving story, rich and varied in scene, human in its characterization and interesting throughout. A thread of romance interwoven into the story binds it into a perfect whole.

That the book has found its place in the hearts of Americans is evidenced by the fact that it is now in its 153d edition.

THE UNITED STATES INFANTRY ASSOCIATION

"The object of the Association shall be to promote the efficiency of the Infantry arm of the military service of our country by maintaining its best standards and traditions, by fostering esprit de corps, by the dissemination of professional knowledge, and by exchange of ideas as to the utilization of such knowledge with particular reference to the rôle of Infantry in modern war."—Article III of the Constitution.

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Dues are $1.00 annually, payable in advance. Members may obtain the INFANTRY JOURNAL for $2.00 per year. The Infantry Association is not responsible for opinions expressed in published contributions.

All communications should be addressed to the Secretary, the United States Infantry Association, Room 508, Union Trust Building, Washington, D. C. Cable address: Infantry, Washington.

The Branch Associations

This month we have added five new Branch Associations. This leaves only the following regiments to complete the organization: 1st, 27th, 31st, 57th, 59th and 64th Regiments and the 4th, 5th, 6th, 7th, 8th, 10th, 11th, 12th, 18th, 19th and 21st Machine-Gun Battalions. The 27th and 31st Regiments have been waiting until they are assembled in the Philippine Islands before completing their organization. The remaining regiments have their branches in process of organization, which should be completed within the next month.

We hope to have the Machine-Gun Battalion Branches in line by our next issue. So far only about half of them have responded to the call.

Organization of Branches in Cities

One of the most important things that officers of the Army can do these days is to assist Reserve Officers with the problems that confront them. One of the best means of accomplishing this is through organization. Members of the Infantry Association on duty in cities where there are a number of Reserve Officers have a splendid opportunity to do something for the Reserve Officers and for the service. The Infantry Association offers an established organization with which Reserve Officers may become affiliated as associate members. We want to organize Branch Associations in every city where a sufficient number of Reserve Officers are interested in such a project.

The secretary will be pleased to hear from any member of the Association regarding this matter and every assistance will be given in the organization of Branch Associations. Let us hear from you.

Action on Bulletin No. 2

Branch Associations are urged to take action on the proposed policy of the Association as outlined in Bulletin No. 2. Only about half of the Branches have sent in their action on this matter.

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